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LIVES
OF
GAME ANIMALS

Volume I — Part I

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THE COUGAR'S HEAD

FROM LIFE BY ERNEST THOMPSON SETON, 1886

LIVES

OF

GAME ANIMALS

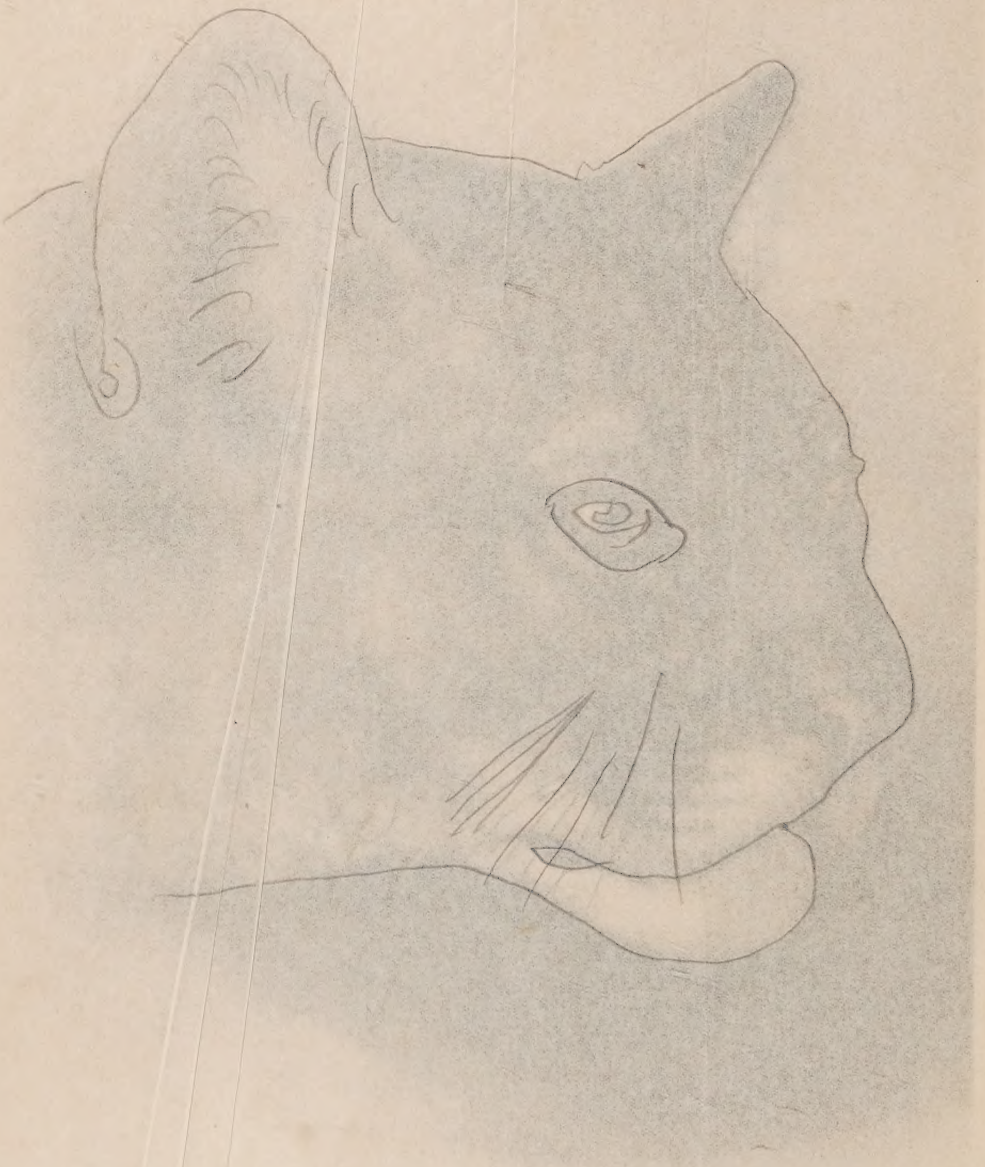
An Account of those Large Animals in America, north of the Mexican Border, which are considered "Game," either because they have held the Attention of Sportsmen, or required the Protection of Law.

BY

ERNEST THOMPSON SETON

VOLUME I — PART I
CATS, WOLVES, AND FOXES

GARDEN CITY NEW YORK
DOUBLEDAY, DORAN & COMPANY, INC.
1929



LIVES

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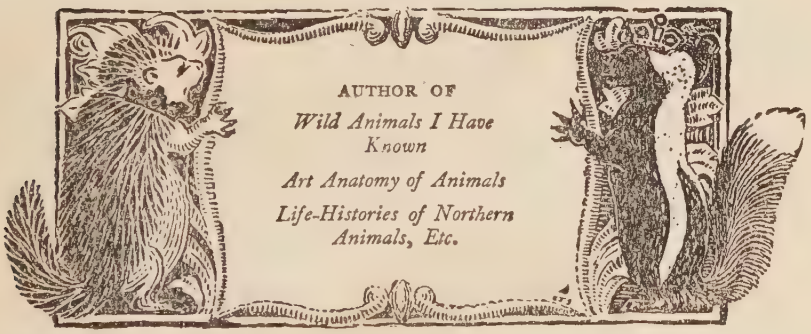
An Account of those Land Animals in America, north of the Mexican Border, which are considered "Game," either because they have held the Attention of Sportsmen, or received the Protection of Law.

BY

ERNEST THOMPSON SETON

FELLOW NEW YORK ZOOLOGICAL SOCIETY
MEMBER NAT. INST. ARTS AND LETTERS



WITH 50 MAPS AND 1500 ILLUSTRATIONS
BY THE AUTHOR

VOLUME I — PART I
CATS, WOLVES, AND FOXES

GARDEN CITY NEW YORK
DOUBLEDAY, DORAN & COMPANY, INC.
1929

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THE THOUGHT

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The Lynx, the Gray-wolf, the Arctic Wolf.—E. A. Preble, of the Biological Survey.

The Bobcat.—Dr. Hartley H. T. Jackson, of the Biological Survey.

The Coyote.—Dr. W. B. Bell, of the Biological Survey.

The Desert Coyote.—Vernon Bailey, of the Biological Survey, and Prof. Charles T. Vorhies, of Tucson, Ariz.

The Red-fox.—George L. Fordyce, of Youngstown, Ohio.

The Arctic Fox.—Dr. E. W. Nelson, of the Biological Survey, and Miller Christy, of London, England.

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The Desert Fox.—Prof. Charles T. Vorhies, of Tucson, Ariz.

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PREFACE

THERE was once a great mosaic, constructed of precious stones, jewels, and gold, exquisite in workmanship, full of history, and setting forth the laws of life, well-being, and joy.

That mosaic was broken, scattered, and lost. No one knows exactly what it was like. But wonderful morsels are picked up from time to time in the dustbins, in the woods, on the highway, in the dens of animals, in the minds of men, in the dreams of children.

To a student who saw certain of these gleams of colour—hints of wonder—there came in some sort a vision of the lost masterpiece, and he set about piecing together such broken bits as he could find. Vast gaps there were; but by patient toil he assembled enough to reveal a little of the glorious thing a-coming, and the glimpse that the restoration gave afforded him exquisite happiness. In the very doing of it he found an ample reward.

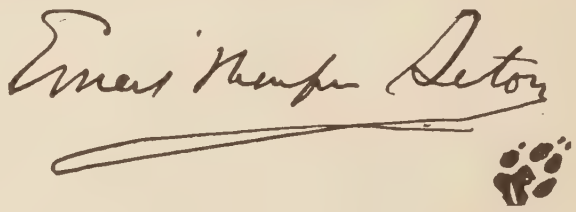
Fellow woodmen! May I claim to be that student? The life of each of my animals is a part of the great mosaic. The scraps I have gathered in the woods, in the records of the great museums, in the journals of naturalists, in the tales of guides and hunters. Much trash and tailings galore I found; but every little while my rake turned up a flake of gold, a bright little bit of enamel—a precious fact, a thing with the stamp of the Master.

And this test I could always apply in assembling the fragments: if they are put together aright, they fit perfectly and need no tooling; a little clearing of mud, perhaps, but no filing, no reshaping. Such tampering could work nothing but ruin. When they are right, they fit.

Many gaps there are and always will be, but sections of the wonder are coming to view.

These Hundred Lives, then, are my attempt at fitting the parts of the mosaic that have come to hand. They will, I hope, prove a starting point for other workers in the field; those with larger gifts and opportunity. At any rate, I have had the joy of making the attempt.

I have finished my work. Let me add a word. I do not consider that I am offering even a fragmentary presentation of the final truth that is coming. This I feel—that I am merely assembling tools, and some day a great man will come, and with these tools construct a telescope that shall surely reveal to us the vision that the world is awaiting.



THE SCOPE

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CATS, WOLVES, AND FOXES

VOLUME II

BEARS, RACCOONS, BADGER, AND WEASELS

VOLUME III

DEER, ANTELOPE, BUFFALO, SHEEP, AND PECCARY

VOLUME IV

SQUIRRELS, RABBITS, ARMADILLO, AND OPOSSUM

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The Divisions on Map I may be set forth thus:

Arctic Region divided into:

Faunas

GREENLAND
ALASKAN
BARREN-GROUND
ALPINE
ALEUTIAN

Temperate Region divided into:

Faunas

HUDSONIAN	Subalpine subfauna Yukon subfauna Hudsonian subfauna Labrador subfauna Newfoundland subfauna	Boreal Zone
CANADIAN	Canadian subfauna Rocky Mountain subfauna	Boreal Zone
SITKAN		Boreal Zone
PACIFIC COAST		Boreal Zone
CAMPESTRIAN	Saskatchewan or True Campestrian subfauna Okanagan subfauna	Transition Zone
ALLEGHANIAN	Western or Prairie Alleghanian subfauna Eastern or Woodland Alleghanian subfauna	Transition Zone
CAROLINIAN	(with Upper Sonoran)—Upper Austral	Austral Zone
LOUISIANIAN	The Gulf-strip and the Lower Sonoran together—Lower Austral	Austral Zone

Tropical Region:

Shown here in broad outline only.

INTRODUCTION

The Faunal Areas of America[1]

By far the most important factor in the distribution of life is *temperature.*

The grand temperature point in nature, the one at which all life conditions are changed suddenly, is the *freezing point of water*, and the two most important divisions of North America are shown by lines drawn across the continent indicating:

(a) The region in which water *never freezes*, and

(b) The region in which *always* there is some water frozen;

Or in other words:

(a) The south *limit of frost*, and

(b) The south limit of *perpetual frost* in the ground that is exposed to the direct rays of the sun.

These lines demark respectively the north edge of the Tropical and the south edge of the Arctic Realms; the region between is the Temperate Realm. Thus we have the primary division of the northern hemisphere into *Tropical, Temperate, and Arctic Realms*, corresponding with the distribution of plants and animals, and that portion of each which belongs to North America is called a Region.

1. *The Tropical Region.*

If the earth were flat and without currents of air or water, the north boundary of the Tropical Realm would coincide exactly with the geographical Tropic of Cancer (N. Lat. $23\frac{1}{2}°$), which is the northernmost limit where at some time each year the sun is directly overhead. It is virtually this line

---

[1]This is founded chiefly on Dr. J. A. Allen's *Natural Provinces of the North American Temperate Region* (1871), his *Geographical Distribution of the Mammals* (Bull. U. S. Geol. and Geog. Survey Terr.–Map I, 1878, IV, No. 2), his *Geographical Distribution of North American Mammals* (Bull. Am. Mus. Nat. Hist. Dec. 29, 1892, read Jan. 26, 1891), Dr. C. Hart Merriam's *Geographical Distribution of Life in North America* (Proc. Biol. Soc. Wash., April 13, 1892), and *Life Zones and Crop Zones of the United States* (Bull. No. 10, Biological Survey, 1898); with assistance in California from Joseph Grinnell's maps in *Pacific Coast Avifauna*, No. 3, 1902.

I have taken Dr. Allen's nomenclature as a basis, adopted Dr. Merriam's main lines of division, and, for the region north of the northern boundary of the United States, have proposed some new names and subdivisions.

modified by local influences, pushed northward by currents of warm water and southward by cool, high uplands.

This is the region where frost is *unknown*, where the summer is long and hot, and where there is no cold winter. It is the land of the palm trees, the parrots and Monkeys, the home of the black human races.

2. *The Arctic Region.*

Similarly, the south boundary of the Arctic Region is virtually the Arctic Circle (N. Lat. $66\frac{1}{2}°$), which is the south limit of day without night in midsummer, and night without day in midwinter; that is, the land of the midnight sun; and this would be the exact south boundary of the Arctic Region but that in America the cold currents of Hudson Bay, etc., and the warm currents of the Mackenzie and the Yukon, etc., have bent the line southward and northward as indicated.

This is the land of long, cold winters and short, mild summers, the country where *frost never leaves the soil.* It is a region *without trees*, the home of the White Bear, the White Fox, the Polar White Hare, the White Lemming, the white owl, and the snowbird.

And whether considered in the Far North or on the mountain tops which form Arctic islands in the warmer regions, its south or lower boundary is the best-marked faunal line in America.

3. *The Temperate Region.*

This lies between the two, and takes in the United States and the greater part of Canada. *Its north line is the limit of trees, its south line the limit of frost.* This is the region of long, bright summer, and of short, cold winter that comes with frost and snow. This is the range of deciduous trees, as well as of pines and spruces, the land of corn and wine, the proper home of the agricultural white man.

We are now concerned only with the Arctic and Temperate Regions. Each of these regions is divisible into life zones, which theoretically extend east and west across the continent.

These also are bounded on the north and on the south chiefly by the lines of temperature. Concerning these limits Merriam says: "Investigations conducted by the Biological Survey have shown that *the northern distribution of terrestrial animals and plants is governed by the sum of the positive temperatures for the entire season of growth and reproduction*, and that *the southward distribution is governed by the mean temperature of a brief period during the hottest part of the year.*"[2]

[2]Life Zones and Crop Zones, etc., 1898, p. 54.

But other factors enter the problem of distribution. Of these, humidity is probably most important. In North America it makes divisional lines and cuts each of the temperate zones in two or three segments called *Faunas*. This is a theoretical limitation. Elevation, proximity to areas of distribution, accessibility, etc., are elements to be considered in mapping faunal areas.

As a matter of practice the boundaries of the Faunas were arrived at by actual observation, thus:

When a great many of the well-marked life forms called species agree in recognizing a common limit, the fact is accepted as evidence that within that area is a set of conditions necessary to create a Fauna (or Flora).

A faunal area may be divided into several *Subfaunas*. These are, of course, less pronounced. When a species is found ranging over several Subfaunas it is usually represented in each by a geographical race.

The Arctic Region is divided into five faunas:

Alaskan, characterized by the Northern Fur Seal, Banded Seal, Pacific Walrus, Grant Caribou, yellow wagtail, emperor goose, Steller eider, Nelson gull.

Barren-ground, characterized in its main area by Muskox, Parry Ground-squirrel, Lemmings, snow-goose, willow and rock ptarmigans, etc. (*Ungava* and certain *polar islands* should probably be ranked as subfaunas of this.)

Greenland, characterized by Greenland Caribou, Ward Muskox, Greenland redpoll linnets, Reinhardt ptarmigan, and various European species.

Alpine, which is the top of each mountain that rises above timber line anywhere in North America, and characterized in places by white-tailed ptarmigan, rosy finch, pipit, etc.

Aleutian,[3] comprising the Aleutian Peninsula and contiguous islands, a treeless coast region characterized chiefly by peculiar species of Voles; also of birds, such as Alaska wren, gray-naped finch, gray song-sparrow, Nelson ptarmigan, Atkan ptarmigan, etc.

Some consider the Arctic to be of one fauna; if this view be accepted these five will be subfaunas.

The Temperate Region is divided into the following:

The Hudsonian Zone or *Fauna* comprises the northern or spruce belt of the great coniferous forest that stretches across the continent from Labrador

[3]In moving this from the Temperate to the Arctic Realm I follow Osgood, N. A. Fauna, No. 24, 1904, p. 24.

to Alaska—and that runs southward along the upper timbered slopes of the higher mountains of the United States and Mexico. It lies next the Barren-grounds of the north, and the Alpine of the high mountains, and in both is the region of stunted spruce and the home of many characteristic birds and mammals.

It is found in five subfaunas:

(a) The Hudsonian Subfauna or true Hudsonian, whose south limit is about summer isotherm 55°. Characteristic species are: northern shrike, common redpoll, Harris sparrow, tree-sparrow, white-crowned sparrow, gray-cheeked thrush.

(b) The Yukon Hudsonian Subfauna, the region of the White Sheep, the Alaskan Grizzly, several species of Brown Bear, etc.

(c) The Subalpine or Mountain Hudsonian Subfauna chiefly in Yukon and British Columbia, characterized by Mountain Goat, Black Sheep, Yukon Ground-squirrel etc.

(d) The Labrador or Atlantic Hudsonian Subfauna, characterized chiefly by very dark races of species that are widely spread over several faunas. In this subfauna, at Hamilton Inlet, is an island of the Canadian Fauna.

(e) The Newfoundland Subfauna. This is the Hudsonian part of Newfoundland; owing to its isolation it is fairly well marked. Its species are many; for example, the Newfoundland or White Caribou, the Newfoundland Lynx, Newfoundland Red-fox, Welch ptarmigan, etc.

The Canadian Fauna is the southern part of the great transcontinental coniferous forest and is prolonged southward, as shown, along elevated plateaus and mountains in irregular capes and islands as far as Mexico. Among the many characteristic mammals and birds of the Canadian Zone are the Porcupines, Woodland Caribou, Star-nosed, Brewer, and Gibbs Moles, Water-shrews, Voles and Long-tailed Shrews of various species, Northern Jumping Mice. The north limit of this fauna forms the northern limit of the large Skunks, the Star-nosed Moles, the Hoary Bat, the Woodchuck, etc. Its southern edge is also the southern limit of the Canada Lynx, the Wolverine, Pine-martens, Moose, Caribou, the Porcupines, and various species of Short-tailed Meadow-mice of the genus *Phenacomys*, etc. Characteristic birds are the white-throated sparrow, Blackburnian, yellow-rumped and Audubon warblers, olive-backed thrush, hermit thrush, three-toed woodpeckers, crossbills, and Canada jays.

It is found in two subfaunas:

(a) The Canadian Subfauna, or Canadian proper, extending in its

main area from the Atlantic Ocean westward to the east slope of the Coast Range. This is a land of coniferous trees and aspens. Among its characteristic animals are Moose, Woodland Caribou, Canada Porcupine, hermit-thrush, spruce grouse.

(b) The Rocky Mountain Subfauna, extending from Southern British Columbia southward along the higher mountains into Mexico. The Mountain Redsquirrels, Canadian Mountain-sheep, the Yellow-haired Porcupine, Yellow-bellied Marmot, Rhoads Marten, Baird Hare, etc., are characteristic of its main area.

The Sitkan Fauna might be considered a west-coast division of the Canadian. It is characterized chiefly by exceptional rainfall, dense forests, and dark-coloured races of birds and mammals that have a wide distribution; but it has very few distinctive species of animals.

The Pacific Coast Fauna, comprising the immediate coast from Queen Charlotte Islands down to middle California, characterized by mild winters, very heavy rainfall, forests of enormous trees, and many peculiar animals, as Sewellel, Coast Deer, Pacific Raccoon, and Gibb's Mole.

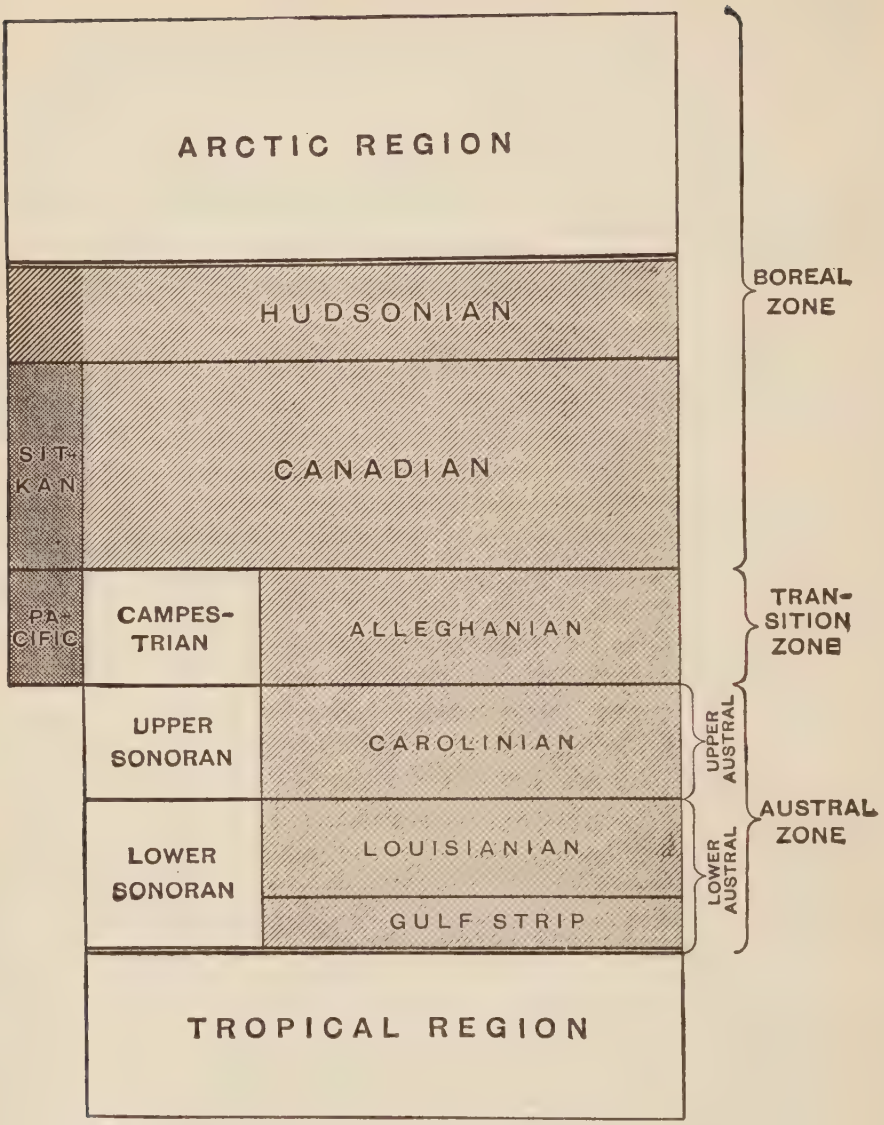
(N. B.—Merriam combines the Arctic Realm with Hudsonian, Canadian, and Pacific faunas to form his Boreal Zone.)

The Campestrian Fauna.—The region of the northern plains, where there is yet rain enough to banish aridity. In British America this appears as two subfaunas:

(a) The Campestrian proper or Saskatchewan Subfauna, of which characteristic species are: Richardson Ground-squirrel, Long-tailed Weasel, Northern Kit-fox, Northern Pocket-gopher, Prairie-hare, Richardson merlin, Columbia sharp-tailed grouse, white-winged blackbird. Its north limit is also the limit of western meadow-lark, McCown longspur, oriole, Cooper hawk, etc.

(b) The Okanagan Subfauna in Southern British Columbia, a dry region in which we find: Okanagan Marmot, Douglas Pocket-gopher, Pocket-mice (*Perognathus*), Jack Rabbit, Badger, White-tailed Deer, etc.

The Alleghanian Fauna takes in part of the new Province of Saskatchewan, southwestern Manitoba, most of southern Ontario and Nova Scotia. At its northern border the Alleghanian forms about the northern limit of the Panther, the Raccoon, the Mole-shrew, the bluebird, catbird, chewink, brown thrasher, and bobolink. Its north border is the south limit of Moose



MAP II—Diagram showing the relationship of the Zones and Faunas of the Temperate Region. A Zone usually comprises one or more Faunas. Subfaunas are not entered. The shading is heavy in proportion to the rainfall.

and Caribou. Its southern border forms about the southern limit of the Ermines, the Harbour Seal, the Common Chipmunk, several species of Field-mice (genera *Evotomys* and *Synaptomys*), the Snowshoe-hare, etc.

It appears in two subfaunas:

(a) The Western or Prairie Alleghanian Subfauna westward of Lake Michigan. Characteristic species are: Gray Chipmunk, Loring Red Vole, Minnesota Red-squirrel, etc.

(b) The Eastern or Woodland Alleghanian Subfauna chiefly east of Lake Michigan. Characteristic species are: Ontario Gray-squirrel and Northern Cottontail.

(The Pacific, Campestrian, and Alleghanian faunas together are Merriam's Transition Zone.)

The Carolinian Fauna, touching the extreme of southern Ontario, that is, the lower region along the north shore of Lake Erie. The northern boundary of this fauna forms, in a general way, the northern limit of the Gray-fox, the Northern Fox-squirrels, the Pine-mouse, the Opossum, and the Bats of the genus *Nycticejus*.

(The Carolinian and Upper Sonoran faunas together are Merriam's Upper Austral Zone.)

The Upper Sonoran Fauna is the arid land and Western continuation of the *Carolinian*. "Except in California, the most conspicuous vegetation . . . is the true sagebrush, which, however, is equally abundant in the *Transition* Zone. Several of the so-called 'greasewoods' are characteristic of suitable soils, and nut-pines (pinyon) and junipers occur here and there, mostly on the mountain slopes.

"Among the characteristic birds and mammals are the burrowing owl, Brewer's sparrow, Nevada sage sparrow, Lazuli finch, sage thrasher, Nuttall's poor-will, Bullock's oriole, rough-winged swallow, five-toed Kangaroo-rats, Pocket-mice, Grasshopper Mice, Sage Chipmunk, Sage Cottontail, Idaho Rabbit, Black-tailed Jack-rabbit, and the Oregon, Utah, and Townsend's Groundsquirrels."[4]

The Lower Sonoran Fauna comprises the hot, arid deserts of the Southwest. "Among the commoner plants are the creosote bush, mesquites, acacias, cactuses, yuccas, and agaves. Among the characteristic birds are the mockingbird, road runner, cactus wren, canyon wren, desert thrashers, hooded oriole, black-throated desert sparrow, Texas nighthawk, and Gam-

[4] Merriam.

bel's quail. Among the distinctive mammals are the four-toed Kangaroo rats, Sonoran Pocket-mice, Long-eared Desert Fox, and the Big-eared and tiny White-haired Bats."[5]

The Louisianian Fauna, as defined by Allen, took in the United States east of the Great Plains and south of the *Carolinian* except the tropical point of Florida. He names as characteristic species: "the Wood-rat, Cotton Rat, Cotton Mouse, Golden Mouse, Rice-field Mouse, Harvest Mouse, Pocket Gopher, the Southern Gray and Southern Fox Squirrels, the Marsh Hare, Swamp Hare, Little Striped Skunk, and a species each of Big-eared and Leaf-nosed Bats."

The Gulf Strip Fauna. Most authorities now separate this from Allen's *Louisianian.* According to Merriam, "it has a semi-tropical climate and is the home of a number of plants and animals not found farther north, among which are the cabbage palmetto, Cuban pine, ground dove, white-tailed kite, Florida barred and screech owls, Chapman's nighthawk, the Florida and boat-tailed grackles, and several small mammals."

(The Louisianian, the Gulf Strip, and the Lower Sonoran together are Merriam's Lower Austral Zone.)

Map 1 sets forth these main divisions, but cannot, of course, give the complex local details. As a matter of fact, every high mountain must and does exhibit a succession of faunal areas from its base to its summit. So that all the great mountain ranges of western Canada should be spotted on the summits with islands of Arctic fauna around which are Hudsonian rings. Furthermore, the valleys that run east and west are always more boreal on the shady side than on the north side, where the slope gives them more directly the rays of the sun.

To recapitulate, the Zones—Boreal, Transition, and Austral—are founded on temperature. The ranges of few, or no, animals follow these Zones throughout.

Zones are subdivided into Faunal Areas, that is, regions which are the definite ranges of peculiar forms of animal life. Variations of rainfall are usually considered the chief cause of these cross-sections, subdivisions of the Zones; but I personally believe that in a local sense at least, many other determining factors assert themselves.

In actual practice, I find that the range of an animal is most easily and accurately set forth by using the names of the Faunal Areas.

[5] Merriam.

The General Plan of Treatment for Each Species

In order to cover the ground more fully and systematically I have considered each animal under some five hundred different lights; that is, I have asked concerning each some five hundred different questions, using a schedule that I made for the purpose in 1898. It seems unnecessary to reproduce that here, but I give it in a condensed form under thirty different heads, asking of each in turn—What do we know of it in this department, or how far has it progressed along these lines? When nothing is said, it means that nothing is known. In the light of this, then, we are struck by the number of blanks and are thus brought to a realization of how much there is to be done. In many cases we have got no further than giving the creature a name.

The sections are briefly indicated below. Their order is varied whenever it has seemed best suited to the material.

Nomenclature:—The accepted or acceptable English names are first recorded; second, the scientific names used by the leading American mammalogists, with the important references. The French-Canadian names have next place.

Experience shows that a record of the Indian names may be of great service to travellers and historians; therefore I give them as fully as possible in the language of each of the tribes of importance or that I personally came in contact with.

In my earliest account of the "Mammals of Manitoba" (1887) I gave the Ojibwa and Cree names, and used a special alphabet that had been recommended by several ethnologists; but I found it open to at least two objections: first, that the ethnologists themselves were not agreed on it; and, second, that only the few who had the alphabet could use my list. The records were meant for the whole world of students, in and out of America. Therefore I have now followed Sir John Richardson's plan, and have given the Indian names in the English alphabet; the letter "g" being hard always.

Capitals:—Since this is a book on mammals, all are capitalized in this work.

Numbers:—When a number is used in an exact or mathematical sense I prefer to express it in figures; except for 1 and 2 figure divisions of time, or where obscurity might result, or when the number begins a sentence, or

when it is a very small number that stands isolated or when used in a personal sense—in which cases it is spelled out.

Gender:—When dealing with the animal as a race or species, I use the neuter gender as consistently as possible. When speaking of an individual I use the gender that seems fittest.

Description:—I have aimed to give only so much description of each animal as is necessary for identification, and even then have usually described each animal three times. Setting forth:

(a) The impression it makes as one sees it alive at a short distance.
(b) A sufficiently full description, assuming the specimen to be in hand.
(c) The peculiar points that will distinguish it from its nearest allies.

Measurements:—Three standard measurements are given:

Total length.—This is the distance in a straight line from tip of nose to tip of bone in tail (ignoring the hair), when the creature is fairly stretched out.

Tail.—Set the tail at right angles to the back, take the distance from the back to the tip of the bone in tail (ignoring the hair). This is the length of tail.

Hind-foot.—This is the distance in a straight line from the end of the heel to the tip of the longest claw.

The measurements, usually those of an adult male, are approximate. A 10-per-cent. variation over and under is understood. They are given in inches; in parentheses are their approximate equivalents in millimetres.

In the Horned Ruminants—known as Big Game—I have devoted some space to the subject of horns and antlers, and aimed to show the record heads. If any have been overlooked I shall be glad to have the facts for future use.

Speed:—The speed of wild animals is usually exaggerated. I do not believe that there exists anywhere on earth a wild quadruped that on level ground can outrun a good Horse. These facts I set forth in the "Coyote and Antelope Lives"; I have further gathered all evidence I could bearing on the gait, speed, and the climbing and swimming powers of the species treated.

Tracks:—The tracks of each species are drawn and one or two general principles pointed out. Predaceous animals commonly set the hind-foot in

the same track as the front-foot of that side; this correct register enables them to go more silently.

Tree-climbing animals, when running on the ground, bound, and commonly set the front-feet together in a line across the body; ground animals trot, or if they bound, set the front-feet in a line along the body. This corresponds with the hopping of tree-birds and the walking of ground-birds.

Scatology, etc.:—The dung and signs are of as great importance to the student as to the hunter. They offer much history of animals whose presence might otherwise be unsuspected, and they are here recorded as far as my material made possible.

Its mind:—After considering the visible animal the ground is clear to discuss the real subject, the *study of the little mind* that preceded and fathered the mind of man.

The first aspect of this study is environment.

Environment:—The environment is the creator of the animal, the mould in which each species was cast. Therefore, no two can have exactly the same environment, otherwise they would be one and the same species. We look for important light in determining exactly the environment that created each.

Range:—The range of the animal is part of its environment, and long ago I came to the conclusion that every creature is changing its range. So the question becomes not "Is it changing?" but "In what direction is it changing?" Is it winning or losing territory? In this connection it is noteworthy that the species with many extra-limital records are usually the ones that are extending their ranges. It looks as though these wanderers were the advance guard or scouts in a region that ultimately their tribe is to possess.

Maps:—The Maps, begun for the most part twenty-five years ago, aim to show the present distribution of the species, except when otherwise stated.

A spot with a ring around it stands for type locality.

Home Range:—The home range of each individual is next to be considered. No wild animal roams at random over the country; each has a home region, even if it has not an actual home. The size of this home region corresponds somewhat with the size of the animal. Flesh-eaters as a class have a larger home region than herb-eaters. The more evidence we get, the smaller the home region of each animal appears.

In the idea of a home region is the germ of territorial rights. At every step it presents close and interesting parallels with the growth of territorial law in man.

Migrations:—Some animals have two home regions, and make a regular seasonal change from one to the other; such animals are said to be migratory. Extremes of the habit are illustrated by the Woodchuck, individuals of which make a short move from the summer den in the open fields to a winter den in the woods, and by the Barren-ground Caribou, which makes a very complete migration from the open Arctic plains that it frequents in summer to the woods of its winter range, 500 miles away.

But there is another kind of migration, best illustrated by the Moose, though observed in many species. After dwelling for a number of years in a given region they move out in a body to some other and hitherto unoccupied region. The causes of this are not obvious.

Numbers:—An attempt is made, whenever possible, to estimate the actual number of each kind of animal. The data for the calculation are given so that the effort, if not satisfactory, at least affords a starting point for a better estimate.

The numbers of each species seem to increase and decrease in cycles varying from five to ten years. These periods, as far as possible, are recorded and note is made of every point that seems to account for the variations; nevertheless, they are far from being explained.

Food:—The food of each species is carefully considered as far as present light admits. Especially remembering that: Each is classed as the foe of all it feeds upon. Also that: In the food question we find the beginning of all property rights, even those of range.

Property:—The high development of the property instinct is remarkable in some of the lowest forms of mammalian life. Beginning with food or mates, it extends to nest and range, and, finally, to personal property that has nothing but an æsthetic claim to notice.

The devices used as property marks are most interesting. Some animals, as Bears, claw and gnaw the trees on their range—but most kinds use the scent produced by special glands. Of this class are Weasels and Wolves.

Storage habit:—The frugal habit of storing food is found in most of our higher animals, probably in all except the Horned Ruminants. It is one of the most civilized instincts, and attains its maximum development in those animals which store not for themselves alone but for their communities—of this class are Mice and Beavers.

Relation to light:—The relation of the animal to light is an interesting department of environment—as a general rule, birds are diurnal, beasts crepuscular. But there are few birds or beasts that prefer the full glare of noonday or the black gloom of a dark night. No animals can literally *see*

in the absolute dark; they need some light, but not much. Coons and Skunks are night creatures, Squirrels are sun-seekers, but most others, even Bats, are lovers of twilight.

Among savage nations there is a prejudice against sleeping in the moonlight. It is said to produce many kinds of trouble. I have sought for sound reasons in this or for parallels among the animals, so far without success. On the contrary, it would seem that some species, as certain Deer and Bats, regulate their movements to take advantage of the light of the moon.

Sociability:—Gregarious animals are not necessarily sociable. Bank swallows nest together, *i. e.*, gregariously, but do not assist each other in any important way—so are not sociable. Antelope run in herds at a time, so are gregarious, but do not unite their efforts for a common purpose, so are scarcely sociable. On the other hand, Wolves do not den in colonies or continually move in bands, yet they unite their powers to help each other in tasks beyond the strength of one, so are eminently sociable.

Sociability reaches its highest pitch in certain rodents, such as Voles, that have communal dwellings or villages under a crude law of common interest, or the Beaver, with its wonderful pond community—patriarchal rather than democratic.

Means of Communication:—Communication must progress with sociability. Other things equal, we find animals profiting by each other's society; that is, truly sociable in proportion as they have advanced in methods of communicating one with another, and *vice versa.*

While voice, gesture, and touch are widely used, the most surprising are the smell signals. These are highly developed in the Antelope and several other species, but are of less interest than the smelling-posts of Bears, Dogs, Wolves, Foxes, etc. These I have examined and treated at length.

Senses:—Evidence as to the powers of touch, taste, sight, hearing, smell, and direction have been sought for.

But some cases, like those cited in the Coyote, are so extraordinary and so difficult of explanation by the operation of the ordinary senses that many field naturalists have been led to believe in a special sense, called second sight or telepathy. Modern psychologists, however, do not accept the telepathic theory, but suggest, rather, that hitherto we have failed to gauge accurately the sense capacity of animals.

Amusements:—The evolution of amusements is a fascinating theme. We find all stages among our animals. A high pitch is reached when many adults of a species will meet together under circumstances divesting the meeting of any sex or food impulse, and engage in some friendly contest for

the joy of combat, without anger or danger. The highest stage is reached when there is a set place with special apparatus. This is seen in the Otter slide and the European Badger's game of "King of the Castle."

Mating:—The marriage customs of animals are full of human interest and lessons. There can be no doubt that at first animals were hermaphrodite, and that as soon as sex appeared, promiscuity was the order of the time. This, through ages of experiment, was displaced by polyandry and polygamy and these in turn by pure monogamy in the highest animals. So that although all forms are represented to-day, monogamy is proving its superiority.

Other things equal, a monogamous animal will beat a polygamous in the struggle for life. As a rule, the higher quadrupeds in North America that hold their own against man are monogamous.

The relation of the father to the family is important for observation here. As soon as he becomes a member of the family group, an entirely new and much higher plane is reached.

Home:—Home is the abiding place of the family. The home group among all higher creatures is essentially a trinity of father, mother, and young. Any other grouping with more factors or less is not successful; therefore, only the truly monogamous quadrupeds have a home. A study of the species herein treated shows this to be literally true. In each case I have endeavoured to describe in detail the home place of the species; including not only the nest itself with its linings and approaches, but the storage places, chambers, galleries, and ventilators in connection, as well as the burrows and above-ground runways, with their various signs and marks to indicate their direction, use, or owners.

Sanitation:—Coincident with the founding of a home must appear the rudiments of sanitation. The more elaborate the home the higher the idea of keeping it clean. The many devices of animals show gradation between the communal midden heaps of the Voles, the daily cleansing of the Wolves, and the wonderful dry-earth closets of the Pocket-gophers. I have sought to learn how far each species has progressed on this line.

Training of the Young:—While the young of some low animals never see their parents at all, but begin life with nothing save an equipment of instincts, others are wholly dependent on their parents, and the higher they are the more dependent they are and the more they profit by parental training. It was notorious among falconers that a falcon trained by its mother was always superior to one trained by man. The same remark applies to the Cheetah or Hunting Leopard of India.[6] Training is given chiefly by means of

[6]See Mamm. of India, T. C. Jerdon, 1874, p. 117.

example; whether consciously or not, I do not know. I do not know what consciousness is; it may be that most human acts are not conscious, but that is another question, and it does not alter the fact of training.

Love of the Beautiful:—Very few mammals show a love of the beautiful in sight or sound. The gift is much less developed than in birds, yet the faculty is not absent. It is, I believe, axiomatic that no creature can *respond* to music, much less produce it, without having pleasure in it. The readiness of the Coyote and the Gray-wolf to respond to certain sounds, and their power to produce sounds, some of which are highly musical even to us, are evidence of their having progressed far in this direction; and the enjoyment of the Pack-rat in its pile of glittering baubles is founded, as I see it, on no other sense than the love of the beautiful.

Morality:—It is possible to show that five of the Ten Commandments are natural laws, namely, the ordinances against disobedience, murder, impurity, theft, and falsification, the breach of which among animals entails severe punishment.

These things I have set forth in detail elsewhere.[7]

Vice:—Vice among animals affords an interesting field of enquiry. There is more of it than is generally known.

Vice I assume to be the deflection of any natural part or power from its proper purpose to one which works harm for the species. Thus we see self-mutilation among Monkeys and parrots. We see hens devouring their own eggs, the loco habit among range cattle and Horses, rare cases of infidelity among pigeons, of stealing among Pack-rats, and incest among geese, as well as unholy barren alliances between species wide apart.

We have, indeed, recorded among animals nearly every kind of vice that was known among men and forbidden by Mosaic law.

With few exceptions, however, these cases are among domesticated or captive animals; and the questions arise: Has all this evil been developed in the animals by their captivity? or has their captivity merely given us unusual opportunities for observing it?

The latter seems more probable, though there is some truth also in the former explanation.

Crime:—In the way of animal crime nothing is better known than infanticide by father or mother. In most cases it arises from man's interference with the young. If we handle the new-born young of a Rabbit the mother is likely to kill them; this I have seen many times. In menageries many little Bears are born and a large proportion killed by the mother. It may be objected that she killed them accidentally in her anxiety to carry

[7]See Natural History of the Ten Commandments, Doubleday, Page & Co., 1907.

them beyond the reach of man, but the detailed cases given in the Lynx and Otter chapters cannot be so explained. This generalization I draw: that when man tampers with the young it oftentimes so affects or obliterates the maternal instinct that the mother deliberately destroys her own offspring.

Whether or not this occurs in a state of nature is another question. The hunters and trappers generally believe that it does. The male parent especially is charged with occasional infanticide. The evidence is conflicting.

Suicide:—If suicide means realization of the fact that such and such an act means death and escape from certain unpleasant conditions, and that this full realization is followed by deliberate choice of death, then animal suicide is not proved and is not likely to be.

If, on the other hand, we allow it to be suicide when the animal, driven frantic by grief, pain, anger, or despair, blindly turns its destructive powers against itself—that is, allows its destructive or defiant instincts to overpower its self-preservative instincts with results disastrous and sometimes fatal—then is animal suicide of frequent occurrence.

There are many degrees of this.

An Orang which I was watching in Philadelphia flew into a fit of jealous rage on seeing the keeper give some favourite food to its neighbour only, and dashed its own head against the floor violently and repeatedly.

Wolves suffering the pains of poisoning often bite their own legs and flanks.

A Blackbear observed by Richard Kearton was so infuriated at its strong fellow prisoner getting all the cakes thrown in, that it bit its own paws.

In each of these cases we see a form of suicidal instinct which needs only to be pushed a little further to be literally suicide.

Enemies and Disease:—The enemies of each species should be considered and gauged with care. The struggle for life is at all times so bitter that each species is barely able to hold its own, has all the burdens it can bear (a thought that has its meed of comfort for us); a trifle more of destruction and down it goes, a trifle less and it spreads mightily.

Parasites are sometimes to be enumerated as disease. The kinds and the modes of combating them are important. But all parasites are not enemies. The species of fly which pupates in the dung of the Grizzly-bear is as likely to be a friend as a foe.

Odd partnerships:—One of the most interesting and obscure traits observed in wild animals is their unexpected friendships. The British Badger is known to share its den occasionally with the Fox, and the Fox with the

Rabbit. Instances are here given of a friendship between a Badger and a lost child, a Badger and a Coyote, also of a Red-squirrel and an Acadian owl, a Coyote and a Cougar, a Coyote and a Blackbear.

Whatever the explanation, it is always gratifying to find that any animal has reached a plane above the purely carnal.

Commensalism:—Strange comradeships and parasitism are on opposite sides akin to commensalism. Of this nature is the habit seen in some Mice, of quartering themselves on the hoards of certain Ground-squirrels.

Many cases not easily classed will come to mind. For example, the Water Shrew that lives in the Beaver house, the fly that pupates in the Bear's dung, the beetles that live in the filth at the bottom of a Red-squirrel's nest.

Age:—Quadrupeds are supposed to live from four to five times as long as the time they need to attain maturity. Their life is in three parts: youth, prime, and age. Many facts in line with this belief are adduced, as well as all available data fixing the normal life term of each species.

Strange incidents:—Strange incidents not referable to any of the above constitute another chapter.

Relation to man:—Finally, space is devoted to a consideration of the animal in its relation to man; either indirectly as a help or hindrance to agriculture or as source of commercial products.

References to a work that is cited but once in the "Life" are given in full in the footnotes. When a work is several times quoted, a brief catch-title is used at the place and the full title given in the "List of References" at the last part of the "Life."

LIVES
OF
GAME ANIMALS

Volume I — Part I

Order Carnivora or Flesh-eaters

CATS, WOLVES AND FOXES

ORDER CARNIVORA OR FLESH-EATERS

Mostly large animals (except the Weasels). All our species (except the Sea-otter) have six small incisors in each jaw; all have *four large canine teeth*, and the premolars developed, not to grind, but to cut like shears.

1. Family Felidæ or Cats

Large, digitigrade animals, clad in fur that is striped or spotted. In some cases, the spots disappear with maturity. Tail, usually long; 5 toes on fore-feet and 4 on hind, all with sharp, retractile claws; skull, short and broad; face, flattish; ears, well developed, and, in all our species, dark behind with light central spot; tongue, set thickly with horny points, curving backward for bone-scraping; clavicles, small and floating.

Teeth usually: Inc. $\frac{3-3}{3-3}$; can. $\frac{1-1}{1-1}$; prem. $\frac{3-3}{2-2}$; mol. $\frac{1-1}{1-1} = 30$

Genus *Felis* Linnæus, as above, but with long tail.

Genus *Lynx* Kerr, as above, but with short tail, tufted ears, and premolars $\frac{2-2}{2-2}$, total 28.

2. Family Canidæ or Wolves and Foxes

Large, digitigrade animals, clad in fur, without spots or regular stripes, tail, long and mostly bushy; ears, large, usually brown or dark behind and without the central light spot; 5 toes on front and 4 on hind-feet; claws, blunt and not retractile; muzzle, long and sharp; tongue, without bone-scraping points.

Teeth: Inc. $\frac{3-3}{3-3}$; can. $\frac{1-1}{1-1}$; prem. $\frac{4-4}{4-4}$; mol. $\frac{2-2}{3-3} = 42$

Genus *Canis* Linnæus, as above, but form robust, size large, and tail less than half the length of the body.

Genus *Alopex* Kaup, in skull, etc., between *Canis* and *Vulpes*, the ears short and rounded; the soles of the feet clad with dense bristly hair.

Genus *Vulpes* Brisson, as above, but smaller, form more slender; snout, sharp; tail more than half the length of the body; claws semi-retractile; eye-pupils, linear.

Genus *Urocyon* Baird, like *Vulpes*, but teeth different in detail. The temporal crests are widely separated, and the lower jaw has a double angle at the back below. The mane on the tail is common in some degree to all our *Canidæ*.

FAMILY FELIDÆ

LIFE I—THE JAGUAR

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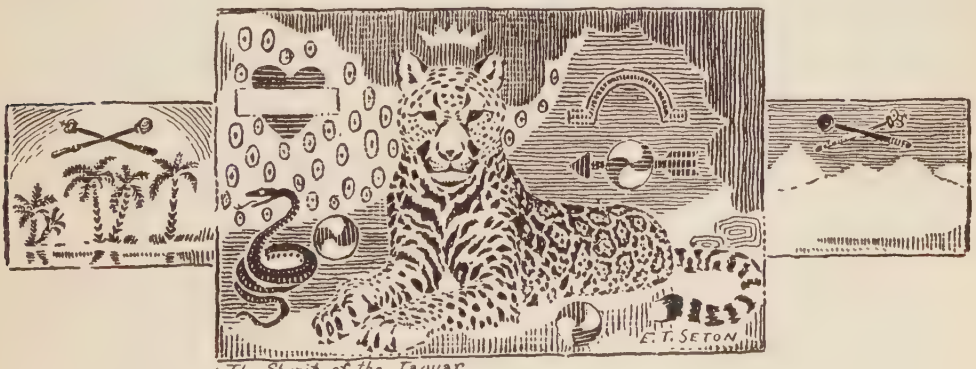

The Spirit of the Jaguar

The Jaguar, American Tiger, American Leopard, Mexican Tiger, Ringtailed Panther, or Spotted King-cat

Felis onça Linnæus

(L. *Felis*, a Cat; *onça*, the Portuguese name of the animal; akin to *ounce*, the Snow-leopard)

Felis onça Linnæus, 1766; Syst. Nat., XII, p. 61.
Type Locality—America meridionale, *i. e.*, South America

Felis onça hernandesii (Gray), 1857, Proc. Zoöl. Soc., p. 278.
Type Locality.—Mazatlan, Sinaloa, Mex. The form dealt with here is *F. hernandesii*

Spanish, *Ounça or Onza* (Azara).
Mexican, *El Tigre.*
Apache, *Tutinquillé* (Baird, Mex. Bd., p. 7).
Kammei Tribe of Southern California, *Hút-te-kul* (Merriam).

The word "Jaguar" is native American. It appears in the forms *Jaguara* and *Yagouareté.* Also according to Felix de Azara (p. 184), as *Yaguarete*, *Yagua*, *Yaguaeté*, *Yaguapara*, *Yaguara*, and *Guazuara;* also for a kindred but small, plain-coloured species as *Yaguarondi.*

It stands for the largest of the American spotted Cats, whose range is from Patagonia to the Texas Red River and southern Arizona. They vary so greatly in colour, size, and details of anatomy, that many scientists reckon them as several distinct species lumped under the popular name. There are at least several well-marked geographical races, but the huge gray Jaguar of Paraguay and the brightly coloured dwarf forms of Mexico show no greater divergence than do the various White-tailed Deer found in the United States.

The old name *Felis onça* is now confined to the Jaguar of Brazil, which country is what Linnæus meant by "America meridionale."[1] The giant Jaguar of Paraguay has recently been described as separate, under the name of *Felis paraguensis* Hollister.

The Mexican Jaguar was described by Gray in 1857 as *Felis hernandesii.* This is the only form that enters our borders. Compared with typical *onça* it is much smaller and paler, with the black markings small.

[1] Brisson: Le Règne Animal, 1756, p. 270.

PLATE I.—PHOTOGRAPHS OF FEMALE JAGUAR
National Zoo, Washington, 1923, by E. T. Seton

A beautiful ♂ taken by J. H. Batty in Escuinapa, Sinaloa (Am. Mus. 25009) Aug. 26, 1901, is as follows:

Total length, 68 in. (1727mm.); tail, 24½ in. (622 mm.); hind-foot, 9 in. (229 mm.).

Baird says that the largest Jaguar skin that he saw was taken at Las Mores above Eagle Pass; it was nearly 5 ft. long without the tail.[2] An average male is 7½ ft. in total length; an average female 6½ ft.

A large male Jaguar killed by John M. Phillips near Tampico, Mex., Dec. 21, 1910, was measured: Total length, 6 ft. 6½ in. (1993 mm.); tail, 21 in. (533 mm.); height at shoulder, 28 in. (712 mm.); girth of head, 25 in. (635 mm.); of neck, 24¾ in. (628 mm.).[3]

Colour of the above Sinaloan specimen: All the upper and outer parts of a warm buffy yellow or golden tawny, and all the under parts white with black spots everywhere. These spots are small (½ in. to 1 in. across) where they fall on the tawny, especially on head, shoulder, and forearm, and much bigger where they fall on the white. On the white they are up to 3 or 4 in. long. On the white of the shoulders and chest they unite to form 2 or 3 short crooked bars; and on the back they are so black, solid, and close that they form a chain—almost a dark band. The ear is black behind with a central spot of buff, and dull white inside. The tail is buff above for two thirds; the last third, *i.e.*, the tip, is white, with solid black spots everywhere. Those on the last third, the white portion, are so solid as to form 3 or 4 nearly complete rings. There is a black outline to the mouth, beginning under the whiskers on each side. This soft golden buff common to nearly all royal Cats looks positively luminous as it peeps from under a jet-black spot, and yet it can be exactly matched in the pale soft tan we see on the Coyote's legs, the Cottontail's nape, the Chipmunk's flank, or the Gray-squirrel's paw.

But the strongest feature is the pattern of broken rings or rosettes of black along the sides, each enclosing a slightly deeper area of buff on which are one or two black dots. Normally these central dots are not found in the Leopard, and they are partly or almost wholly absent from the giant Gray Jaguar.

There is, however, no part of the above Jaguar description that does not apply, word for word, to African Leopard skins, now before me. The tangible differences are, the central dots on the side rosettes, the bars on the chest, and the short tail of the Jaguar. Nevertheless, these colour features are not absolute, for one of the Congo Leopards has a few central dots on the side rosettes and the beginning of bars on the chest.

[2] Mamm. Mex., Bd., p. 8.

[3] In the Open, Pittsburgh, March, 1912, p. 12.

But the Leopard is 7 ft. long (2134 mm.), has a tail 36¼ in. (921 mm.), hind-foot, 10½ in. (267 mm.); that is, its tail is a foot longer than that of the big Jaguar, which was probably twice its weight.

It is a remarkable fact that the tail of any one of the Cats, Foxes, Rabbits, or Deer, will distinguish the species more readily and certainly than any other external feature.

Young: Description of the colour is given in the section on "Young."

Melano, that is sooty or nearly black specimens of Jaguar, are often found. They are merely freaks. The spots show still blacker on the dark ground. The Mexicans call them *Tigre negro*.

Albinos, according to Humboldt, have been seen in Paraguay; in these "beautiful" specimens, the spots are so pale as scarcely to show on the white ground.[4]

Weight. The Jaguar is the largest of the American Cats; much heavier than the Cougar or even the Old-world Leopard.

John M. Phillip's big male, cited above, weighed 176 lbs., though in poor condition. George K. Cherrie considers that an average male Brazilian Jaguar will weigh 250 lbs., and a very large one 300 lbs.; an average Brazilian female about 200 lbs.

In Mexico they are much smaller.

Dan J. Singer, the well-known sportsman, gives the ordinary weight of Guiana specimens at 160 or 200 lbs.

Roosevelt says of his Jaguar that it was heavier than the 227-lb. Cougar he killed in Colorado and as heavy as an adult African Lioness.[5]

Humboldt speaks of a Jaguar, "the largest he ever met," whose length "surpassed that of any Bengal Tiger I had ever seen in the Museums of Europe." (This was near Cano de la Tigrera, near San Fernando de Apure, in the Orinoco country.)[6]

The Paraguay Jaguar, however, must be at least twice as heavy as the Mexican species, for it has the size and powers of a Tigress. The gigantic specimen brought by Roosevelt from Corumba, Brazil (Am. Mus. 36950), measured on the dry skin, is 98½ in. in total length, of which the tail is 26½ in.; the hind-foot is 11½ in. In colour this specimen is peculiar, its ground colour being of a pale sandy, and the central black dots of the rosettes are almost wholly absent.

In the Museum of the Jardin des Plantes, Paris, is a Jaguar skeleton that is as large as that of an ordinary Tiger. The skull is 13½ in. in length

[4] Pers. Narr., II, p. 267.

[5] Braz. Wild., p. 81.

[6] Pers. Narr., I, p. 189, and II, p. 157.

Records

In California

The following three records for the San Francisco region are not accepted by the Biological Survey, who maintain that they are too vague. They may have referred to Mexico, or to young Cougars in the spotted coat.

(?) G. H. Von Langsdorff mentions it thus, among the wild animals found about the settlement of San Francisco: "The American Lion, *Felis concolor*, the American Tiger, *Felis onça*, Stags, Roes, Wolves, Foxes, Bears, and Polecats, *Viverra putorius*, are very common here; the latter is called by the Spaniards *Sorrillo*."[9]

(?) Beechey says it is a native of the wooded country between San Francisco and Monterey and adds the helpful details that "the Lion (*Felis concolor?*) and the Tiger (*Felis onça*) are natives of these woods, but we never saw them; the inhabitants say they are small, and that the Lion is less than the Tiger but more powerful. A large species of Mountain Cat (*Gato del Monte*) is common."[10]

(?) Pierre Charles de Saint-Amant, who travelled in California and Oregon during 1851–52, describes the hunting and killing of a Mountain Lion, Puma, or Cougar (*Felis puma*) which his party encountered near San Francisco Bay, and the feast which all enjoyed of its flesh,[11] then adds: "There is also in California the American Tiger, or Jaguar. It inhabits the back country and I never had the luck to meet it. It is reckoned more formidable than the Cougar, like it, readily climbs trees. A French doctor that I knew encountered one in the environs of Presidio; it tried to kill his Dog. The Jaguar can carry off a Horse or an Ox a very long way. It is chiefly during the night that it seeks its prey and makes its victims."[12]

Merriam writes concerning the Jaguar in California: "An old chief of the Kammei tribe (called by the Spanish 'Diegenos') told me that in the Cuyamaca Mountain region in San Diego County, the 'Tiger,' while rare, was

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[9] Voy. and Trav., II, p. 213.

[10] Narr., II, p. 403.

[11] Voy. en Cal., pp. 534–6.

[12] As above, p. 537.

well known to the old Indians who call it the 'Big-spotted Lion,' Hut'-te-kul."[13]

James O. Pattie, who made the overland trip in 1824–30, relates that on Dec. 12, 1829, he killed a Jaguar on an island of the Colorado River below its junction with the Helay [Gila]. After referring to Deer, Foxes, Wildcats, Panthers, etc., with which he was evidently familiar, he says: "We killed some wild geese and pelicans, and likewise an animal not unlike the African Leopard, which came into our camp, while we were at work upon the canoe. It was the first we had ever seen."[14]

But the latest and most convincing of these Californian records is by Grizzly Adams (J. C. Adams), who, in the summer of 1855, discovered a family of Jaguars, male, female, and their young, in a rocky cavern on the south side of Tejon Pass in the Tehachapi Mountains, facing eastward over the Mohave Desert. He did not secure specimens, but all authorities who have read his record accept it as safe. His account is fully set forth in the section on "Habits."

In Arizona

Prof. Charles T. Vorhies writes me as follows: "I. E. Roberts of Tucson saw a Jaguar cross the Silver Bell highway about 3 miles northwest of the city one evening in September, 1920. Exact date could not be supplied, although I interviewed Mr. Roberts in October. The animal crossed the road ahead of the automobile in which the observer was riding, and stopped at a distance of only about 50 yards, faced about and stood watching the car. As this was an hour before sundown, and the observer reported a perfectly clear view of the animal, describing it as spotted, etc., and even observed the catlike switching of the tail, there seems no chance for error. Mr. Roberts personally related the incidents to me.

"On the occasion of a visit to the Chiricahua Mountains, in 1918, I was shown a beautiful Jaguar skin in the possession of Mr. E. J. Hands, who told me of shooting it after a chase ending with the cornering of the animal in a small cave. Later, in 1921, I wrote to Mr. Percy Hands, a brother, whose address I knew, for details and date of the killing of this specimen. He wrote me as follows concerning the case: 'It had been killing Cattle and Horses at various places on the west side of the range for some time, but as it had not been seen, the killings were attributed to a Lion. Its tracks were first seen on the east side of the range . . . on January 6, 1912, by myself. A calf was killed, also a cow, and partly eaten on Bonita. The stock

[13] Journ. Mamm., Nov., 1919, p. 40.

[14] Pattie's Personal Narrative, 1905 edition, p. 194.

killed, I believe, were owned by Stafford who had a small ranch on Bonita. Tommy Stafford and others set a Bear trap at the kill and trapped the Jaguar. They tracked it for some distance but could not follow it and sent for my brother Edward J. to help them. . . . About 10 o'clock at night John (E. J.) came to camp. He had kept the trail for a considerable distance, then lost it, and decided to come for us and make a new start early in the morning. Just at dusk he ran on to the trail again on Bonita Peak. We started early, quickly picked up the trail, and after about an hour's trailing I located the Jaguar in a kind of cave worn by the elements in the soft rock. I tracked him in, but as I could not see his track leaving, I set my rifle against the rock and got on my hands and kness and crawled in about 3 or 4 feet to see. He was lying down tired out from dragging the heavy trap—19 pounds, I believe it was. I woke him, and heard the chain and trap rattle about 4 feet from me in the dark and I need not tell you what I did next. When outside I called to John and Frank. They came up, John and I took each a side and Frank kneeled down looking in. The Jaguar lowered his head to look out and Frank shot him through the head and killed him. The date was Jan. 12, 1912.'

"Another Jaguar was trapped and shot by a party in the Chiricahuas several years before. I was not there at the time, and names and dates are too hazy to be of value.

"Besides the above records and reports, I can only say that two Jaguars have been taken in the Santa Rita Mountains since I have been more or less acquainted with that country. These were taken by government trappers, and the only way to get certain dates would be through Musgrave. However, my own recollection . . . is that the first one was taken about 5 years ago, which would make it the winter of '17–'18; and the second about 3 years ago, or the winter of '19–'20. Mr. Nicholson also has told me of an experience of several years ago in this range, in which some Mexican miners working night shift in a mine became fearful of going over a certain ridge to camp at 3 A. M. They claimed some large animal appeared each night and frightened them. He accompanied them finally and heard the animal scream, and saw it outlined against the sky, but could see no colour, owing to the darkness. He fired at it but missed, and it was not seen again. He believes it to have been a Jaguar.

"A good many years ago, a Jaguar was killed in the Baboquivari Mountains, and one at least has been killed in the Santa Catalinas. Concerning these I have no dates. Both these were taken before I came here in 1915. I am inclined to think that the Santa Catalina record was about 1912.

"I have given you in the above *everything* I know of Jaguars in south-

ern Arizona, though much of it is of little value except to show that they have not been so rare as might have been supposed.

"I might only add as a matter of interest in general, that a High School boy living northwest of Tucson reported to his principal, whom I knew personally, that tracks of Mountain Lion and Bear were not uncommonly to be seen in the near neighbourhood of his father's ranch, always going one way or the other in the line connecting the west end of the Santa Catalinas and the Tucson Mountains. They believed that migrations between the ranges along this route often occurred. The live Jaguar seen in 1920 must have been about on this route, and it was going toward the Catalinas."[15]

E. A. Goldman sends me the following additional Arizona record. A Jaguar was "killed by J. H. Durham at his cattle ranch in the Tortolita Mountains, about 30 miles northwest of Tucson in 1913. I saw the skin of this animal. The Jaguar seems to cross the Mexican line much more frequently than the Ocelot."

Nelson writes in 1918: "Several have been killed within our borders during the last 10 years, including one not far from the tourist hotel at the Grand Canyon of Arizona."[16]

The Holbrook *Observer* of Jan. 20, 1920, records that a large Jaguar was killed at Rincon Mountain, Ariz., "on Saturday" by Stanley R. Graham and party, of Chicago.

In 1922, Dr. Harry Garcelon of Victorville, Calif., told me that in 1907, when in Arizona, he was shown the skin of a Jaguar that had recently been killed on the Mogollon Mountains near Fort Apache. He says Jaguars are still found in the box canyon of the Rio Grande and in Donna Ana County, N. M.

In New Mexico

The extraordinary case of the murderous Jaguar of Santa Fe in 1825, is fully set forth later. This happens to be the northmost positive record, as well as the most detailed and amazing story of a Jaguar's ferocious exploits.

Baird gives it in good faith, and it seems to be a reliable New Mexico record. The question has been raised as to whether the Santa Fe mentioned was not some other place, maybe in South America on some other Rio Grande, as the account pictures a town on a broad river which is dotted with wooded islands. The results of my investigations are given in the section on "Attacks on Mankind."

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[15] Letter, Feb. 22, 1923.

[16] W. A. N. A., p. 413.

PLATE II—Earliest known drawing of Jaguar, unless meant for Cougar in spotted coat. The tufted tail and the locality point to Cougar. This appears on Sebastian Cabot's Map of America, 1544. The portrait is spread over Pennsylvania and the Ohio Valley. (From the original in New York Public Library.)

Nat Straw is said to have killed a Jaguar on Taylor Greek, Socorro County, N. M., May, 1900.[17]

The earliest historic North American record is by Coronado in 1540, as follows: At Cibola, that is Zuni, "Bears, Tigers, Lions, etc. . . . For game, they have Deer, Leopards, etc."[18] Purchas translates the Leopards as "ounces."[19]

In Texas

Audubon and Bachman record that in 1845 it was found about the watering places in the region near San Antonio de Bexar. Col. [John C.] Hays of the Rangers, they say, killed 4 Jaguars during his stay in Texas about 1845.[20]

Gen. Sam Houston told Bachman that he had found the Jaguar "east of the San Jacinto River and abundantly on the head waters of the eastern tributaries of the Rio Grande, the Guadaloupe, etc."[21]

Capt. J. P. McCown, U. S. A., saw one in his camp near the Rio Grande.[22]

"The westernmost specimen of the genus was seen in the Guadaloupe Canyon (Sierra Madre) by Mr. J. Weyss, one of the assistants of this Commission."[23]

Vernon Bailey records the killing of a large Jaguar near London, Kimble County, Texas, near the Llano River, in the spring of 1910.[24]

In Colorado

The following may be a good record. If so, it is a new animal for the Colorado list, but is entered as very doubtful.

(?) Rufus B. Sage, while camped on Soublet's Creek at the base of the Rockies on the headwaters of the Platte, within 30 or 40 miles of Long's Peak and 2 days' march from Fort Lancaster, in December of 1843, says: "One of our party encountered a strange looking animal in his excursions, which, from his description, must have been of the Leopard family. This

[17] Barber: Proc. Biol. Soc. Wash., XV, 1902, p. 192.

[18] Winship translation of Coronado's letter to Mendoza, Aug. 3, 1540, 14th Ann. Rep. Bur. Ethno., pt. I, p. 560.

[19] Pilgrimage, 1613, p. 966.

[20] Q. N. A., III, p. 5.

[21] As above, p. 6.

[22] As above.

[23] Mamm. Mex. Bd., p. 7.

[24] Forest & Stream, Jan. 7, 1911, p. 11.

circumstance is the more remarkable as Leopards are rarely found except in southern latitudes. However, they are not unfrequently met in some parts of the Comanche country, and their skins furnish to the natives a favourite material for arrow cases."[25]

As Sage was quite familiar with Panthers and Bobcats, this may have been a Jaguar, or, though much less likely, an Ocelot.

As will be noted more fully later on, the Jaguar is excessively given to travel. It is a far roamer, going even hundreds of miles from its native headquarters. This accounts for most of the Jaguar appearances in the United States, and also contains promise of more Jaguar records in the future.

[25] Rocky Mountain Life, p. 347.

Numbers

In South America the Jaguar has always been plentiful. Humboldt says: "These animals are very frequent in the tracts situated between the Cerro Maraguaca, the Unturan, and the banks of the Pamoni."[26] Then adds on the same page: "This frequency of large Jaguars is somewhat remarkable in a country destitute of Cattle. The Tigers of the upper Orinoco are far less bountifully supplied with prey than those of the Pampas of Buenos Aires and the Llanos of Caracas, which are covered with herds of Cattle. More than 4000 Jaguars are killed annually in the Spanish colonies, several of them equalling the mean size of the royal Tiger, of Asia! Two thousand skins of Jaguars were formerly exported annually from Buenos Ayres alone."

This is all along the line of well-known information, but most are surprised to learn that in southwest Texas, according to Kennerly, it was common in 1859[27] and, as already noted, according to Gen. Sam Houston, abundant on the Rio Grande and Guadaloupe, in the '40's.[28]

Outside of this region it was always a straggler, and at the present time it is little more than a rare fugitive inside this region. For there is no doubt that the species is all but exterminated in the United States, and any individual discovered to-day is most likely a wanderer from the wilder regions south of our border.

Haunts

The Jaguar is an animal of the well-watered dense forests in the tropical or subtropical parts of the Western World; and its distribution within these limits depends on the local food supply and proximity of the region to its centre of abundance. Thus, it might have been perfectly at home in Florida with its wet forests and wealth of Deer and turkeys, but evidently the intervening regions were possessed of elements or influences that had the force of an impassable barrier to the Jaguar kind. There was plenty of food and some suitable forest in the southern parts of New Mexico; and being contiguous to its Mexican range, there were always stray pioneer Jaguars venturing out to possess these new lands. But the climate probably

[26] Pers. Narr., II, p. 470.

[27] Mamm. Mex. Bd., p. 7.

[28] Q. N. A., III, p. 6.

was too severe; for the species can be considered only accidental in the United States except in the low forests of southern Texas and the southeast corner of Arizona, where heat, timberland, and abundance of game appear to have given it a permanent footing.

Compared with the Cougar, it is less of a mountain and more of a forest animal. The Cougar loves the half-open woods, varied with broken ledges, the haunts of Muledeer and Mountain Sheep; the Jaguar prefers the impenetrable thickets along river bottoms where the Whitetail Deer and smaller game find harbour. Possibly it is not straining a point if we claim that the Jaguar's spotted coat reflects this fact, for it looks like broken sunlight falling through foliage on a log or bump, while the Cougar living in more open places, and therefore more often seen by other wild things, is coloured rather to be like the Deer it preys on, and is easily mistaken for it.

Tree-climbing Habits

The Jaguar and the Cougar are called "the Tiger and Lion of America," and it is interesting to note that the two King-cats of the Old World are ground animals and never climb; whereas our own two species take to the trees on occasion, and spend a part of their time aloft, hunting, sleeping, or loafing. According to many authorities, they readily climb and travel about in the roof trees of the forest whenever it may serve their passing whim to do so. But it is well to remember that tree-climbing is largely a question of weight. The 400-pound Lion and Tiger and the 800-pound Grizzly never climb. Their lesser cousins, the Jaguar, the Cougar, and the Blackbear, climb whenever it suits their purpose. But it is the smaller kinds, like Squirrels and Monkeys, that really live in the treetops.

The Voice of the King-cat

Like most of the Cat tribe, especially the larger ones, the Jaguar is very noisy at times, and has a great variety of sounds for use as expression. Humboldt's narrative refers continually to the cries of the Jaguar in the jungle at night.

Grizzly Adams heard it many times uttering a roar which "was loud but clear, short but piercing, differing from any roar I had ever heard."[29]

According to Azara, the Jaguar "utters loud cries by night, especially in the love season, in a very deep and hoarse tone, *Pu, pu, pu,* very frequently repeated.[30]

John M. Phillips likens the call of the Jaguar to a hoarse cough like

[29] Adv. J. C. Adams, p. 357.

[30] Nat. Hist. Para. p. 186.

"uh, uh, uh, uh," repeated a dozen or more times, but maintains that it never utters a roar at all resembling that of a Lion.

So also George K. Cherrie tells me that the sound of the Jaguar is never a roar of the Lion type. It is, nevertheless, the most fearful sound he ever heard in the wilds. Beginning with short, guttural "uh, uh, uh's," it increases them in rapidity and volume, till, after a dozen repetitions, the final "uh's" are short roars of appalling power and effect.

All of these descriptions agree with and are endorsed by W. H. Blackburne's observations in the Washington Zoo.

Mating and Young

From the few facts at hand it is evident that in North America the Jaguar love season is January and that the species is monogamous.

Observations on the captives in the Berlin Zoo showed that gestation continued in various cases for 99, 101, 105, 99, 100 and 101 days; $3\frac{1}{3}$ months, or 100 days being normal.[31]

In Mexico—and of course within our limits when it does occur—the young are born in April or May; for it is part of Nature's plan to have them arrive at the pleasantest time of the year, or at least so that they will know nothing of hardship until they are strong enough to stand it.

In equatorial America, it is arranged otherwise. Since there is no cold weather to fear, the younging-time varies greatly.

The species bring forth 2 to 4 cubs at a birth. Their fur is somewhat like that of the parents, but much longer, and woollier in texture.

A young one, three-quarters grown, from Paraguay (Am. Mus. 36654), is more heavily spotted than the adult. Many of the brown spots on the lower back have an unbroken outline of black, as well as two inner dots. The general scheme is much like that of the Ocelot; indeed, it might pass for a brownish Ocelot but for the total absence of the long stripes on the neck, this part being heavily spotted as in the adult.

When the cubs are a month or 6 weeks old, according to the balance of opinion, they are about as big as a common Cat and begin to follow their parents about. As the mother is, in power at least, a common Cat multiplied some 30 diameters, one can readily believe that there is not a creature in the woods that at this time dare approach the young to do them harm. Indeed, there is not a living thing on earth that she would not face and fight to a finish if it seemed necessary for their protection.

So far as can be ascertained, the male is a permanent member of the family, a loyal husband and father, helping with all his noble powers to feed,

[31] Dr. O. von Heinroth, Zoöl. Beobachter, XLIX Jahrgang, Frankfurt a. M., 1908, p. 16.

protect, and train his offspring. Most of the light we have on their family life is from Grizzly Adams's account as given later.

At the end of a year, according to Dan J. Singer, they shift for themselves. They breed at three years and may live to be 20.[32]

Home-life

As a marvellously interesting record, as well as a strong picture of this creature's home-life, I give in full Grizzly Adams's adventures with a California Jaguar.

In the summer of 1855, accompanied only by his dog Rambler and his 2 pet Grizzlies, Lady Washington and Ben Franklin, he was on a hunting trip in the Tehachapi Mountains, and had made his camp on the south side of the Tejon Pass, on the great slope that faces eastward over the Mohave Desert. I give the rest in his own words:

"I was suddenly aroused at midnight by a fearful snuffing and snorting among my animals; but what to make of the noise I knew not, except that there was danger at hand. It was starlight, but too dark to see; and raising myself in my blankets and seizing my rifle, I listened with all attention. In a short time, I distinctly heard the lapping of water at the spring, which was about 50 yards distant; and, looking in that direction, beheld 2 spots, like balls of fire, glaring at me. I expected an encounter and prepared myself for it; but the stranger beast unexpectedly, after uttering a low growl, turned and leisurely retreated, as if he did not deign to attack, much less to fear me. I could see that he was of large size—a majestic animal of the Lion genus; but this was all I could see."[33]

"My curiosity, as well as my love of adventure, was so much excited by the sight of the magnificent but unknown beast, that during the remainder of the night I could think of nothing else. My imagination presented me with the picture of an animal whose capture would exceed in interest all the adventures of my previous days; and no sooner was it light in the morning than I started out with Ben and Rambler to follow the track and reconnoitre the country. The trail led us 4 or 5 miles over a rough country, and at last into a gorge—one of the roughest and craggiest places man's eyes ever beheld. The only way I could work through it was by crawling, clambering, climbing, and pulling myself from cliff to cliff, and thus getting along by slow degrees. In among the huge rocks which were scattered all over the country there was here and there a space of soft earth where the prints of the animal's feet were plainly to be seen; and it was by

[32] Big Game Fields, pp. 116–17.

[33] Adv. J. C. Adams, pp. 351–2.

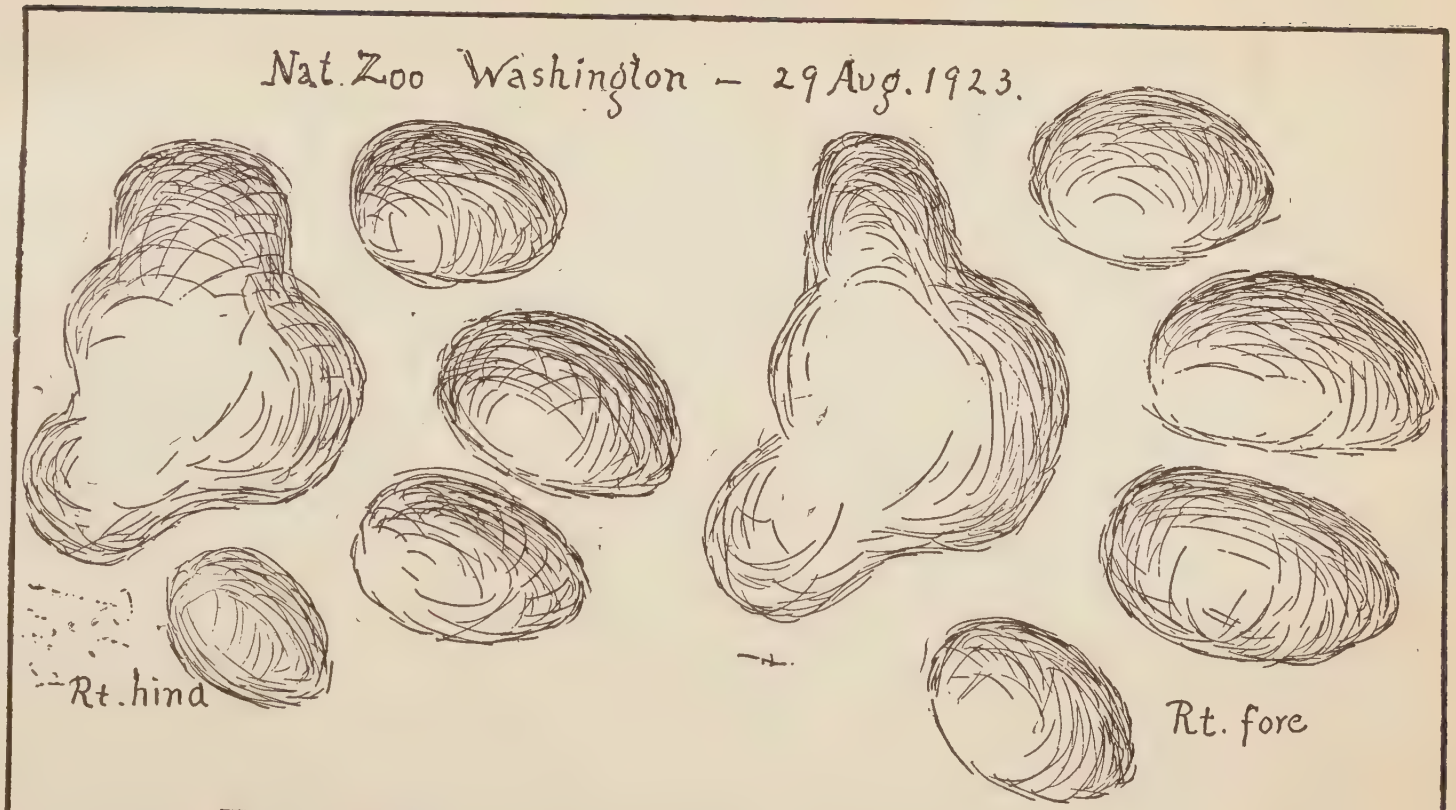

Plate III. Tracks of a small female Jaguar – life-size. – – – –
by E. T. Seton. 1923.

these marks that I pursued the trail into the gorge. Here the marks were better defined; and after following them across the gorge up to the face of a ledge of rocks, I came to a cave, which there was no difficulty in recognizing as the den of the animal.

"The cave was elevated on one side of the cliff, so that a man could with difficulty reach it. In its mouth, and scattered below it, were multitudes of bones and skeletons of various kinds of animals, and among others, of Mountain Sheep, making the place look like the yard of a slaughter house. I endeavoured to reach the cave for the purpose of looking into it, but was unable to do so, and therefore withdrew to consider plans of operations, determined as I was to leave no stone unturned in my efforts to secure the unknown but evidently ferocious animal which made it his haunt. Considering the matter in every point of view, I resolved at last to build a trap on the trail, near the den; but, there being no trees in the neighbourhood, before proceeding further I had to go out and search where I could find timber.

"The country in the vicinity was the roughest that can well be conceived; and it was only with great labour that I was enabled to climb the side of the gorge and pass along the ridge which separated it from another of much the same character."[34]

Having brought timber with great difficulty, he worked all day at his trap, then "went to sleep, but in the course of the night was aroused by a roar, which I supposed to be that of the beast which I was hunting; it was loud but clear, short but piercing, different from any roar I had ever heard; and, as a new fact in regard to the beast, it added to my wonder, for I had already come to the conclusion that the animal was of a different species from any I had ever known. The track was peculiarly large and firm, indicating an animal of great strength and noble bearing.[35]

"There was at this time a new moon, and the gorge, a doleful place even in daylight, was darker than I liked; nevertheless, I could see if any animal passed the trail, and this would be some satisfaction. I therefore watched the twilight pass over the mountains, and saw it grow dusky and at length dark when, overpowered by the fatigues of the day, I curled down by the side of Ben and fell into a slumber. Barely were my eyes closed, however, when a roar roused me and I started up and strained my eyes along the trail from the den to the trap, but could see nothing. In a few minutes the roar was repeated, but in an apparently subdued tone; and directing my eyes in the direction from which it proceeded, I saw a spotted

[34] Adv. J. C. Adams, pp. 353–4–5.

[35] As above, p. 357.

animal, resembling a Tiger in size and form, with 2 young ones. The view was very indistinct, but I could see that the animal was crawling out of the rocks. She went ahead for a little distance, then turned around and appeared to call the little ones, which followed, playing like kittens. My first thought was to kill her and catch the young, and I have often regretted since that I did not take the risks and fire; but I considered that the trap which we had built would be both a safer and more certain method to secure them.

"Remaining silent, therefore, I watched the beasts disappear in the darkness, and neither saw nor heard anything more of them till near morning, when I was aroused by the same masculine roar, which I had heard 2 or 3 nights before. I recognized it immediately, and strained my eyes to see the possessor of that lordly voice. It was, however, so dark that I could not see, though I distinctly heard the tramp of the beast; and it seemed that he was accompanied by his consort and the young ones, which I had seen in the evening. It was evident to me that they had passed near the trap, but they had not entered it; and on examining the tracks in the daytime, I found that they had passed around it.

"Seeing thus that the trap had been passed by, I determined to dig a pit with a falling door; and, accordingly, going to work, in the course of a few days we completed such a trap, 8 feet long, 6 feet broad, and 10 feet deep; and fixed a door over it, swung upon an axle in such a manner as to turn and drop any animal that trod upon it into the pit. The door was covered over with dirt, grass, and leaves in such a manner as to resemble the ground about it, so that I supposed it would be impossible for an animal to detect the deception. I then hung a piece of raw mutton over the door, and retired to my place of concealment, to watch during the night as usual.

"Soon after dark the male animal again made his appearance. As he came to the mouth of the den, he looked around and snuffed the air, and then leaped down, and going a few yards placed his paws upon a rock, and stretched himself, yawning at the same time as if he were waking up out of a sleep. In a few minutes afterward, the female appeared, and approaching, lapped his brawny neck. Pleased with this conjugal attention, the male threw himself upon the ground, and after rolling for a few minutes, stood up, shook himself, and then, with a proud step, trod away toward the traps; and his consort followed him. Their manner toward each other induced the reflection in my mind that nature works much the same in all species of animals; for, even among human beings, I had rarely seen a more expressive indication of conjugal love than was exhibited here.

"The male beast, as nearly as I could see, was twice as large as the

ordinary Cougar, and appeared to be covered with dark round spots of great richness and beauty. His mien was erect and stately, and so majestic and proud in bearing, that it was with pleasure I contemplated him. As he approached the pit, my heart fluttered; now, thought I, is the time of my success; but, alas, for my hopes! the animals, when they reached the place, evidently suspected something wrong; and, after smelling about suspiciously, made a circuit and passed on. They next stopped at the trap which they appeared to examine attentively; they even entered it, and I strained my eyes to see the doors fall; but, no, alas, for my hopes again! the animals came out and went off, without disturbing the bait, and soon disappeared over the ridge. I watched the remainder of the night but neither saw nor heard anything more of the beasts.

"For several weeks after this time I continued making all endeavours to trap these animals. I caught live bait and tried to inveigle them with the choicest morsels, but all in vain. On several occasions, subsequent to those mentioned, I obtained a sight of the animals, but only a passing one; and at last, confident that it would be impossible to trap them, I determined on the first opportunity to shoot. The male I never afterward saw; but the female and her cubs I unexpectedly came across one day in a gorge far removed from the one containing the den. Ben and Rambler were with me at the time; and, as I fired upon her, they bounded forward and engaged with her in a terrific combat, but she tore them dreadfully, and managed to escape. Poor Ben was so badly injured in the encounter as to require my surgical care and assistance for a week or more afterwards; but though I hunted and hunted, I could find no more trace of the beasts or of any animals like them. I was, therefore, not able then, nor am I able now, to pronounce with certainty upon their character. If they were not Jaguars which had strayed up beyond the usual range, I know not what to call them."[36]

Food Habits

In its Texan range the Jaguar feeds on turtles, fish, turkeys, Peccaries, Deer, Cattle, and wild Horses; in Central and South America it adds to this list Agoutis, Capybaras, Tapirs, and Monkeys; and there can be no doubt that it preys on every kind of large animal that it can find and master. This, of course, makes a full list of all the quadrupeds, birds, fish, and reptiles of considerable size found on its range.

It prefers, indeed, the biggest game, for it is gifted with tremendous

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[36] Adv. J. C. Adams, pp. 358–61.

strength, as well as courage and ferocity. Azara tells of one dragging a Horse carcass for 70 paces, then across a river and into the far woods.[37]

Humboldt records their carrying off the swine of the natives, but says that, nevertheless, they were less of a menace than the Bats, by which he means the blood-seeking Vampire Bats that bleed the Cattle so mercilessly and so insidiously that human vigilance is completely set at naught. "Great numbers perished in consequence of wounds made by the Bats."[38] E. A. Goldman says: "At Chepo, I learned that wandering Jaguars periodically kill Cattle ranging on the savannas between that point and the city of Panama."[39]

Like its cousin the Cougar, the Jaguar seems sometimes to make the dietary error of lunching on Porcupine, for Azara mentions having seen spines of the Couiy, or South American Porcupine, in the Jaguar's excrement.[40]

It seems to be a rule that none of the tropical Cats have any fear of water. It is well known that all of the felines love to be warm. They have not the fur to resist the wet, so in cold regions avoid the water. The Jaguar in its equatorial home is credited with many aquatic ways. It will swim rivers of any width when they lie across its path. It will dash into the water to attack an enemy, and is said by many observers to be an adept at catching fish.

Azara's description of this handsome creature playing fisherman is picturesque and probably true, if we explain the saliva bait as accidental rather than part of the plan. He says: "The Jaguar frequently goes into the water a little way, and there discharges some saliva, which attracts the fish, which greedily snap at it, when the Jaguar, who is very fond of them, by a stroke of his paw tosses them on the bank."[41]

Its far-prowling habit in search of food is thus set forth by Nelson: "Few predatory animals are such wanderers as the Jaguar, which roams hundreds of miles from its original home, as shown by its occasional appearance within our borders. In the heavy tropical forest it so commonly follows the large wandering herds of White-lipped Peccaries that some of the Mexicans contend that every large herd is trailed by a Tiger to pick up stragglers. Along the Mexican coast in spring, when sea-turtles crawl up the beaches to bury their eggs in the sand, the rising sun often reveals the

[37] Nat. Hist. Para., p. 185.

[38] Pers. Narr., II, p. 267.

[39] Mamm. Panama, Smith. Inst., 1920, p. 167.

[40] Nat. Hist. Para., p. 185.

[41] As above, p. 185.

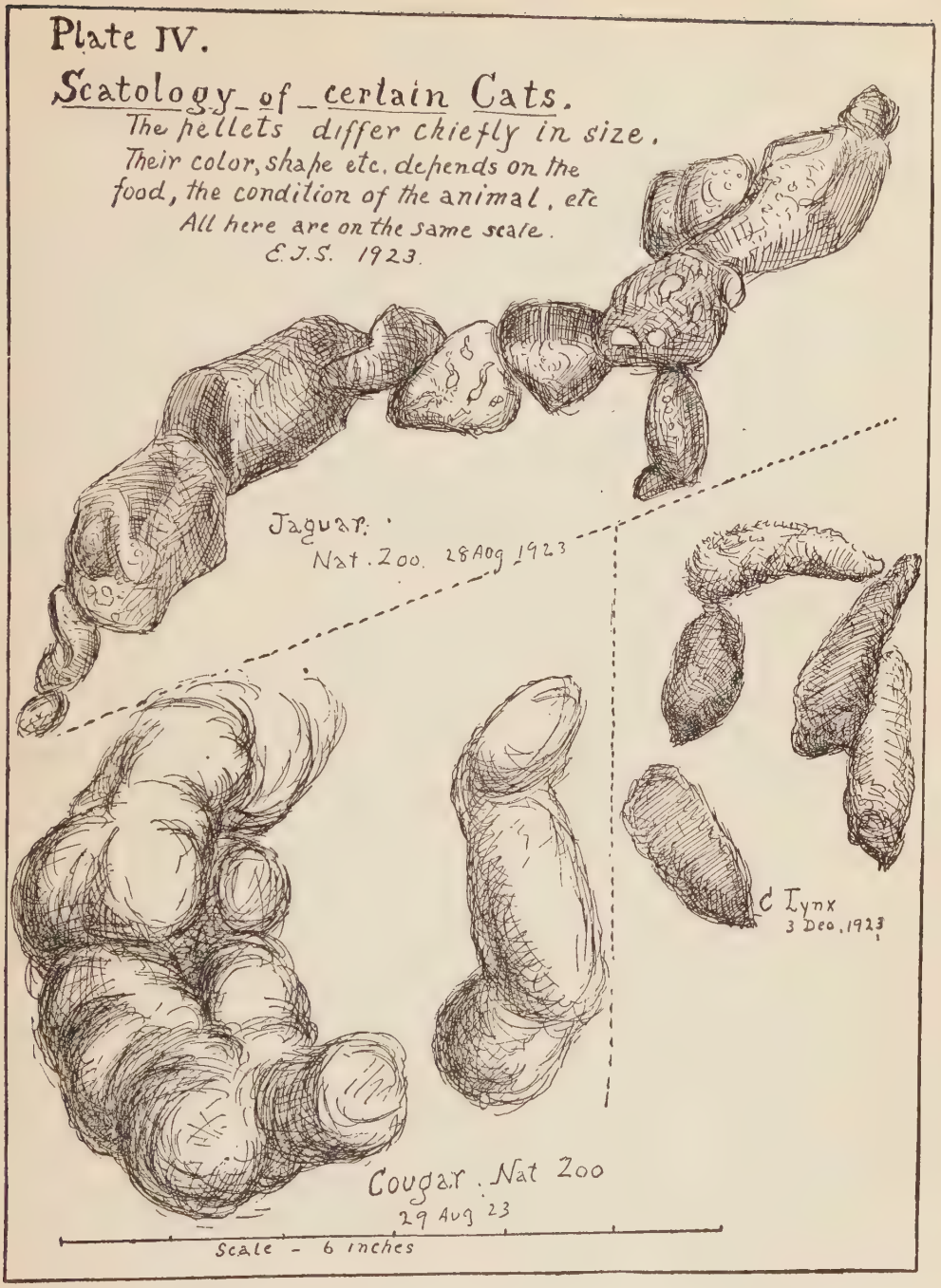
Plate IV.
Scatology of certain Cats.
The pellets differ chiefly in size.
Their color, shape etc. depends on the
food, the condition of the animal, etc
All here are on the same scale.
E.J.S. 1923.
Jaguar.
Nat. Zoo. 28 Aug 1923
♂ Lynx
3 Dec. 1923
Cougar. Nat Zoo
29 Aug 23
Scale - 6 inches

fresh tracks of the Jaguar where it has travelled for miles along the shore in search of these savoury deposits."[42]

J. W. Audubon when in San Antonio, Texas, in 1845, learned much about the then plentiful Jaguars from the Texan Rangers, who were mighty hunters when not proving themselves mighty warriors.

He gives us thus a fine picture of the dignity and conscious force of our spotted King-cat: "When he has finished his meal, he sometimes covers the remains of the carcass with sticks, grass, weeds, or earth, if not disturbed, so as to conceal it from other predaceous animals and vultures until he is ready for another banquet. The Jaguar often lies down to guard his prey after devouring as much as he can. On one occasion a small party of Rangers came across one while feeding upon a mustang. The animal was surrounded by 8 or 10 hungry Wolves, which dared not interfere or approach too near the 'presence.' The Rangers gave chase to the Jaguar, on which the Wolves set up a howl or cry like a pack of hounds, and joined in the hunt, which ended before they had gone many yards, the Jaguar being shot down as he ran, upon which the Wolves went back to the carcass of the Horse and finished him.[43]

Decoying the Jaguar

Most of us have at least a book-familiarity with Moose-calling—that is, luring the animal to destruction by imitating its call notes at the mating time. Other ruminants, as well as birds, are often decoyed in this way, but the Jaguar is the only one of the big Cats that I ever heard of responding to the fateful call of the siren. Nelson's description of the stratagem is as follows:

"In one locality on the Pacific coast of Guerrero I found that the hardier natives had an interesting method of hunting the 'Tigre' during the mating period. At such times the male has the habit of leaving its lair near the head of a small canyon in the foothills early in the evening and following down the canyon for some distance, at intervals uttering a subdued roar. On moonlight nights at this time the hunter places an expert native with a short wooden trumpet near the mouth of the canyon to imitate the 'Tigre's' call as soon as it is heard and to repeat the cry at proper intervals. After placing the caller, the hunter ascends the canyon several hundred yards and, gun in hand, awaits the approach of the animal. The natives have many amusing tales of the sudden exit of untried hunters when the approaching animal unexpectedly uttered its roar at close quarters."[44]

[42] W. A. N. A., p. 413.

[43] Q. N. A., III, p. 5.

[44] W. A. N. A., p. 413.

Attacks on Mankind

To what extent does the superb King-cat commit the crime of crimes, that is, attack mankind?

Unlike the agile Cougar, it undoubtedly takes its occasional toll of our species, and is so amply equipped that only expert hunters fully armed, prepared, and backed by Dogs, have a chance against it in midnight attack.

Azara credits it with a discriminating taste in one of these night raids on a camp. He says it carries off first, by preference, a Dog, then a Negro, then an Indian, and last a Spaniard.[45]

Such exact analysis is probably true of individuals rather than of the species, for the fuller our information, the more we are impressed with the individual variation in body and mind of all great wild beasts.

There can be no question of this, however: The Jaguar occasionally attacks mankind, and is the only American animal that sometimes becomes a man-eater.

Azara says: "Since I have been in Paraguay, the few Jaguars remaining in this country have devoured 6 men, carrying off 2 of them from the midst of companies, who were warming themselves by the fire."[46]

In his South American journey, Roosevelt gives the following account: "The Jaguar, however, has long been known, not only to be a dangerous foe when itself attacked, but also, now and then, to become a man-eater. Therefore, the instances of such attacks furnished me are of merely corroborative value.

"In the excellent zoölogical gardens at Buenos Aires the curator, Doctor Onelli, a naturalist of note, showed us a big male Jaguar which had been trapped in the Chaco, where it had already begun a career as a man-eater, having killed 3 persons. They were killed, and 2 of them were eaten; the animal was trapped in consequence of the alarm excited by the death of his third victim. This Jaguar was very savage; whereas a young Jaguar, which was in a cage with a young Tiger, was playful and friendly, as was also the case with the young Tiger. On my trip to visit La Plata Museum I was accompanied by Captain Vicente Montes, of the Argentine Navy, an accomplished officer of scientific attainments. He had at one time been engaged on a survey of the boundary between the Argentine and Parana and Brazil. They had a quantity of dried beef in camp. On several occasions a Jaguar

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[45] Nat. Hist. Para., p. 186.

[46] As above, p. 186.

came into camp after this dried beef. Finally they succeeded in protecting it so that he could not reach it. The result, however, was disastrous. On the next occasion that he visited camp, at midnight, he seized a man. Everybody was asleep at the time, and the Jaguar came in so noiselessly as to elude the vigilance of the Dogs. As he seized the man, the latter gave one yell, but the next moment was killed, the Jaguar driving his fangs through the man's skull into the brain. There was a scene of uproar and confusion and the Jaguar was forced to drop his prey and flee into the woods. Next morning they followed him with the Dogs and finally killed him. He was a large male, in first-class condition. The only feature of note about these two incidents was that in each case the man-eater was a powerful animal, in the prime of life; whereas it frequently happens that the Jaguars that turn man-eaters are old animals, and have become too inactive or too feeble to catch their ordinary prey."[47]

We have evidence that, like the Wolf and the Grizzly-bear, at one time fearless enemies of man, the Jaguar is now learning the lesson of "guns" and avoids man at any price; whereas in ancient days he was quite ready to face, and even make a meal of him.

The Murderous Jaguar of Santa Fe

One of the most sanguinary and amazing Jaguar experiences on record took place at Santa Fe, N. Mex., a century ago. There can be no question of its accuracy. This Jaguar undoubtedly killed 4 men, but the animal was at bay, unable to escape, and believed itself attacked.

The story appears in the annals of the convent of San Francisco.

His Excellency, Governor J. F. Hinkle of New Mexico, writes me (Oct. 2, 1923) that, according to Col. R. E. Twitchell, the historian, the Convent of San Francisco was situated on the Rio Grande, or Rio Bravo, 18 miles from Santa Fe, at the place now known as Pena Blanca, where its ruins are still to be seen.

The following, an abridged translation from the Spanish, I take from Baird's "Mammals of the Mexican Boundary" (pp. 7–8):

"On April 10, 1825, a lay brother, after having made confession and concluded his prayers, entered the sacristy. There he was terror-stricken on opening the door and seeing himself almost face to face with a Jaguar ('Tigre') of very extraordinary size. In a moment the poor man was in the clutches of the beast, which dragged its victim into a back corner to finish the bloody work.

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[47] Braz. Wild., pp. 31–32.

"The guardian of the convent, on hearing the exclamations in the sacristy, hurried to enter the fatal room, and had scarcely become aware of what had happened when the animal leaped upon his second victim and despatched him with the same promptitude as the first.

"After a while several other men attempted to enter the bloody sacristy, but not without meeting a similar fate, for the first one opening the door was immediately slain.

"A senator, Mr. Iriondo, being present, tried now to approach the sacristy by an adjoining back room which communicated with the former by a small door. The Jaguar, however, had left the sacristy in the meantime through that very door which Mr. I. wanted to use, and before the latter, followed by a small crowd, could enter it, he heard cries, 'Here he is! here he goes! save me!' With this the roaring of the Jaguar was heard, and mingled with it the last exclamations of a fourth victim. Each party now retired, the convent people to the church and the Jaguar to where he had chosen his first stronghold.

"Mr. I. now approached and bolted the door of the sacristy opening into the church, making the least noise he could. A hole was then bored through the door, and finally the crowd succeeded in shooting and killing the dreadful monster through the opening thus prepared."

To this Baird adds: "Some explanation is necessary to make more intelligible this almost incredible occurrence. The Convent of San Francisco in Santa Fe is situated upon the banks of the Rio Bravo [now Rio Grande], which, after freshets, occasionally overflows the islands in front of the town. During one of these overflows all the animals living in the thickets upon the island seem to have been driven out; among them the above Jaguar, which made for the Town side, where he entered the gardens of the convent. A low wall only encircles the latter toward the river. From the gardens he entered a small door, accidentally left open, and so came through an old back vestry to the sacristy. At the time his first unfortunate victim entered the sanctuary from the church side the animal was perfectly aware that his retreat was cut off by the river flood, and thus found himself forced to the desperate attack upon a man, which he was likewise compelled to repeat several times."

Curiosity

There can be no question of the fact that all highly intelligent animals are much moved by laudable curiosity—the desire to understand some new strange animal, object, or circumstance.

"The Jaguar," says Humboldt, "like the Wolf of Europe, follows travellers even when he will not attack them—the Wolf in the open fields

and in unsheltered places, the Jaguar skirting the road, and appearing only at intervals between the bushes."[48]

Audubon and Bachman have much to tell on this subject. They say: "The Jaguar has been known to follow man for a long time." Then add details of an inquisitive individual that followed Colonel Hays. He whirled around and saw the Jaguar looking "right in his eye and gently waving his tail." "The skin was so beautiful it was a pleasure to look at it." So he killed it.[49] George K. Cherrie tells me that in Venezuela in 1905, a Jaguar followed him for a quarter mile out of harmless curiosity.

Playfulness

As a final chapter that aims to present a more pleasing conception of the Jaguar than the established picture of it as a monster of unmitigated and bloody ferocity, I recite an incident that Humboldt recorded and apparently accepted for truth:

"Some months before our arrival [in the Orinoco country], a Jaguar, which was thought to be young, though of a large size, had wounded a child in playing with him.

"The facts of this case, which were verified to us on the spot, are not without interest in the history of the manners of animals. Two Indian children, a boy and a girl, about 8 and 9 years of age, were seated on the grass near the village of Atures, in the middle of a savanna which we several times traversed. At 2 o'clock in the afternoon, a Jaguar issued from the forest and approached the children, bounding around them; sometimes he hid himself in the high grass, sometimes he sprang forward, his back bent, his head hung down, in the manner of our Cats. The little boy, ignorant of his danger, seemed to be sensible of it only when the Jaguar with one of his paws gave him some blows on the head. These blows, at first slight, became ruder and ruder; the claws of the Jaguar wounded the child, and the blood flowed freely. The little girl then took a branch of a tree, struck the animal, and it fled from her. The Indians ran up at the cries of the children and saw the Jaguar, which then bounded off without making the least show of resistance.

"The little boy was brought to us, who appeared lively and intelligent. The claw of the Jaguar had torn away the skin from the lower part of the forehead, and there was a second scar at the top of the head. This was a singular fit of playfulness in an animal which, though not difficult to be tamed in our menageries, nevertheless shows itself always wild and ferocious

[48] Pers. Narr., II, p. 27.

[49] Q. N. A., III, p. 5.

in its natural state. If we admit that, being sure of its prey, it played with the little Indian as our Cats play with birds whose wings have been clipped, how shall we explain the patience of a Jaguar of large size which finds itself attacked by a girl? If the Jaguar were not pressed by hunger, why did it approach the children at all?

"There is something mysterious in the affections and hatreds of animals. We have known Lions to kill 3 or 4 Dogs that were put into their dens and instantly caress a fifth which, less timid, took the king of animals by the mane."[50]

Had Humboldt been equipped with the fuller information that is presented in the Cougar chapter of this work, he would have been led much further in this recognition of the animal's human side. He would doubtless have concluded, as do most modern naturalists, that these, our wild brethren, have the same faculties and emotions as we do, even though in less development. Moreover, they vary as ours do. Sweeping generalizations are useful chiefly in emphasizing the wonderful and variant individuality of these animals.

Enemies

W. H. Hudson has given a remarkable account of the enmity that exists between the Jaguar and the Cougar.[51] Other witnesses substantiate the story. These animals have declared war on each other, and when they meet it is a fight to a finish; and strange to tell, although the Jaguar is bigger, heavier, and stronger, the Cougar is usually the aggressor, and, thanks to his superior agility, is commonly the victor.

There are in current literature many accounts of Jaguars being hunted down and cut to pieces by herds of Havelines or Peccaries. According to some, this valiant little Wild Hog is the most dreaded, fearless, and successful enemy of the big King-cat, but so far I find little foundation for the tales.

The Peccary is the habitual and lawful prey of the Jaguar, and when attacked, adopts the only open and sensible course: he seeks to save his life by headlong flight.

Man is, of course, the implacable enemy of the Jaguar. It is only a question of time now, and maybe very little time, so far as the United States is concerned, before man sends this masterpiece of creation the way of the Dodo, the Auk, the Antelope, and the Sea-cow. One cannot reasonably

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[50] Pers. Narr., II, pp. 267–68.

[51] Nat. La Plata, p. 48.

object, and yet all naturalists regret the ever-widening trail of the exterminator.

Crossing The Divide

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PLATE V.—"OLD ONE-FANG" AT BAY

Photograph at 15 feet, by John M. Phillips of Pittsburgh, Pa.
This is believed to be the only photograph ever taken of a live Jaguar in its native wilds. Taken near Tampico, Mexico, Dec. 21, 1910

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In the fire-light E. T. Seton

The Cougar, Puma, Panther, Painter, Catamount, Mountain Lion, Brown Tiger, Varmint, Sneak-cat, Red Tiger, Silver Lion, Purple Panther, Deer-killer, Indian Devil, Mountain Devil, Mountain Demon, Mountain Screamer, King-cat

Felis couguar Kerr

(L. *Felis*, a Cat; *couguar*, French contraction of the native American name, *Cuguacara*)

Felis couguar Kerr, 1792, Anim. King., p. 151.

Type Locality—Pennsylvania

Pennsylvania Germans, *Bender*.[1]
French Canadian, *Panthère*, *Couguar*.
S. American Spanish, *Guzuara*, *Puma*, or *Yagüapita*, meaning *Red Yaguar* (Azara). He also gives *Caguar* as a contraction of *Cuguacara* (Nat. Hist. Paraguay p. 213).
Mexican, *Leone*.
Ancient Mexican, *Miztli*.[2]
Ojibwa, *Mishi-biji*, *i.e.*, Big Cat or Big Lynx.
Ogallala Sioux, *Inmu-tanka*, *i.e.*, Big Cat.
Santee Sioux, *Mnaza*.
Cochimies of Lower California, *Chimbica*.[3]
Apache, *Yutin*.
Chilenos, *Pagi*.[4]
Muskogee, *Catsa*.[5]
Mickasaukie, *Coo-ot-cho-bee*.[6]

When seen alive, the great size, brown or gray colour, and the long tail are distinctive of the Cougar. Sad to relate, we have no adequate description of the old Eastern Cougar. I therefore give the measurements, etc.,

[1] Shoemaker: Penn. Lion, p. 18.
[2] Baird: Mamm. Mex. Bd., p. 6.
[3] As above.
[4] As above.
[5] Cory: Letter, Mar. 24, 1920.
[6] As above.

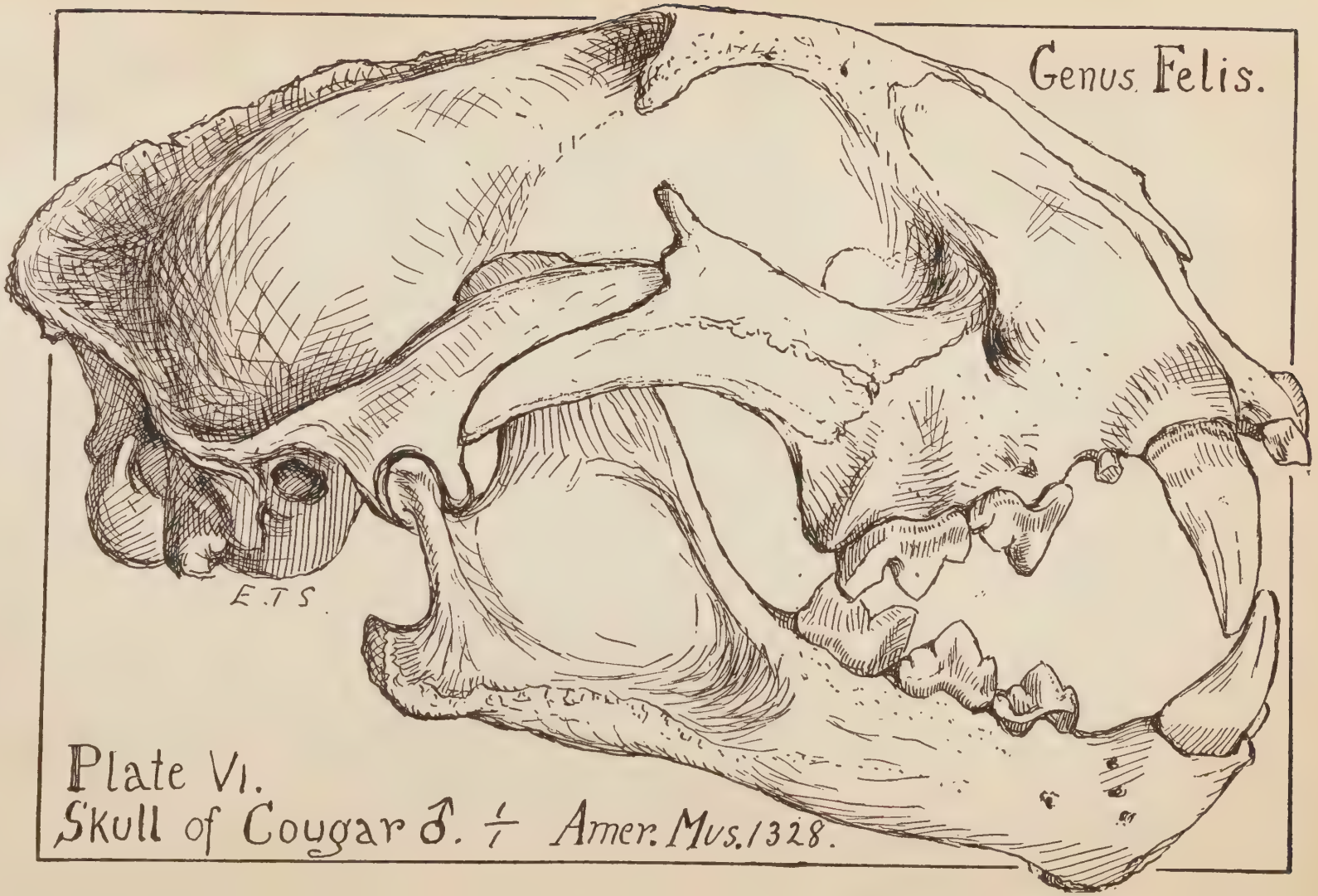

Plate VI.
Skull of Cougar ♂. ⅓ Amer. Mus. 1328.

of the Rocky Mountain creature with the general statement that the Eastern form was somewhat smaller.

To the generic characters it adds the following:

Size. ♂: Total length, 7½ ft. (2287 mm.); of which the tail is about 3 ft. (915 mm.).

♀: Total length, 6½ ft. (1982 mm.), of which the tail is about 2 ft. 8 in. (814 mm.).

The largest ♀ in the Roosevelt collection of 8 adults was 7 ft. long and weighed 133 lbs.; the smallest was 6 ft. long and weighed but 80 lbs.; the others weighed 124, 120, 118, 108, 105, 102.

I find many records of both males and females that show much greater dimensions, but the measurements were apparently taken on the stretched skins.

John Fannin says[7] that of 118 measured by him in British Columbia, one was 7½ ft., ten were 7 ft., the rest below that.

Two medium-sized males taken by Roosevelt in Colorado weighed 164 and 160 lbs. A very large male which he secured was only 8 ft. in total length, though it weighed 227 lbs. For long this stood as the record, but recently a much larger one of probably 300 lbs. has been taken at Hillside near Prescott, Ariz. It was killed by J. R. Patterson, March, 1917.

Concerning this monster, E. W. Nelson, Chief of the Biological Survey, writes me, Aug. 3, 1923: "A letter from M. E. Musgrave contains the following information: 'After the Lion had been killed and skinned, I made a trip to Prescott where I was told of the weight of this Lion. Becoming interested I asked the express agent and several of the citizens of Prescott regarding the weight of the Lion, and they said he had been shipped in from Kirkland to Prescott by express, and that he weighed 276 lbs. after the intestines had been removed.

"'The only measurements I got on the Lion were taken by a man in Prescott and by J. R. Patterson, the man who killed the Lion. He measured 8 ft. 7¾ in. from the tip of his nose to the tip of his tail. . . .

"'I have found since beginning our work in Arizona that Lions run much heavier in Arizona and New Mexico than they do in the northwestern part of the United States that I am familiar with. This, however, I believe, is the largest Mountain Lion that has ever been killed in this State.'"

So that the Hillside Cougar, with its total length of 8 ft. 7¾ in., must stand for the record in size as well as in weight. And it is safe to assume when one is told of 9- or 9½-foot Cougars, that they were not accurately measured. No North American Cougar ever reached such a length.

[7] Forest & Stream, March 6, 1897, p. 184.

African Lions rarely go over 9 ft. The largest Lion taken or measured by F. C. Selous, the African hunter, was 9 ft. 11 in. long in the flesh and weighed 410 lbs.[8]

For lack of material to give a description of the Pennsylvania Cougar, I reproduce that by James E. DeKay in "Natural History of New York State," 1842, Pt. I, p. 47.

Colour. "Body and legs of a uniform fulvous or tawny hue. . . . Ears light-coloured within, blackish behind. Belly pale reddish or reddish white. Face sometimes with a uniform lighter tint than the general hue of the body, oftener with the mouth, chin, and internal angle of the eyes white."

Much more detailed and more nearly topotypic, probably, is the specimen described by Dr. Ebenezer Emmons and ascribed to New York State.

"*Specific Characters.* Colour uniformly dun or fulvous; beneath paler; tail long, extremity dark brown in the male; ears rather rounded and prominent; limbs thick and stout.

"*Description.* The colour of the Puma is remarkably uniform at all seasons of the year. Head rather long; ears light-coloured inside but blackish posteriorly; face whitish about the internal angles of the eyes, upper lips, chin, and the angles of the jaw; hair of the whole body thick and short; tail of the male longer than the female, and darker brown at the extremity."[9]

The usual colour of the Rocky Mountain Cougar is a pale yellowish sandy brown shaded into dull white on the under parts; lips, white, with a dark spot at the base of the whiskers; the back of the ears is dark with a lighter spot in the middle as in most Cats, and the tip of the tail nearly black. This colouring is known as the *red coat.*

It has also a *blue coat* which has no reference to age, sex, or season, and differs from the red only in its general dull *grayish* colour. (It should be noted that most of the Cats have two colours: The spotted Cats, a yellow or black coat, the one-coloured Cats, a gray or red coat.)

The iris is yellow or brown; the pupil is round.

The young are of a yellowish brown with black spots. This spotted coat they wear till they are about 6 months old, when they usually change to adult colours. In rare cases, the spots persist till the middle of the second year, in which coat the Cougar may have been mistaken for a Jaguar. J. Fannin tells of a 2-months-old kitten that had no spots at all.[10]

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[8] Encyclopedia of Sport, II, p. 6.

[9] Quads. Mass., 1840, p. 35.

[10] Forest & Stream, Mar. 6, 1897, p. 184.

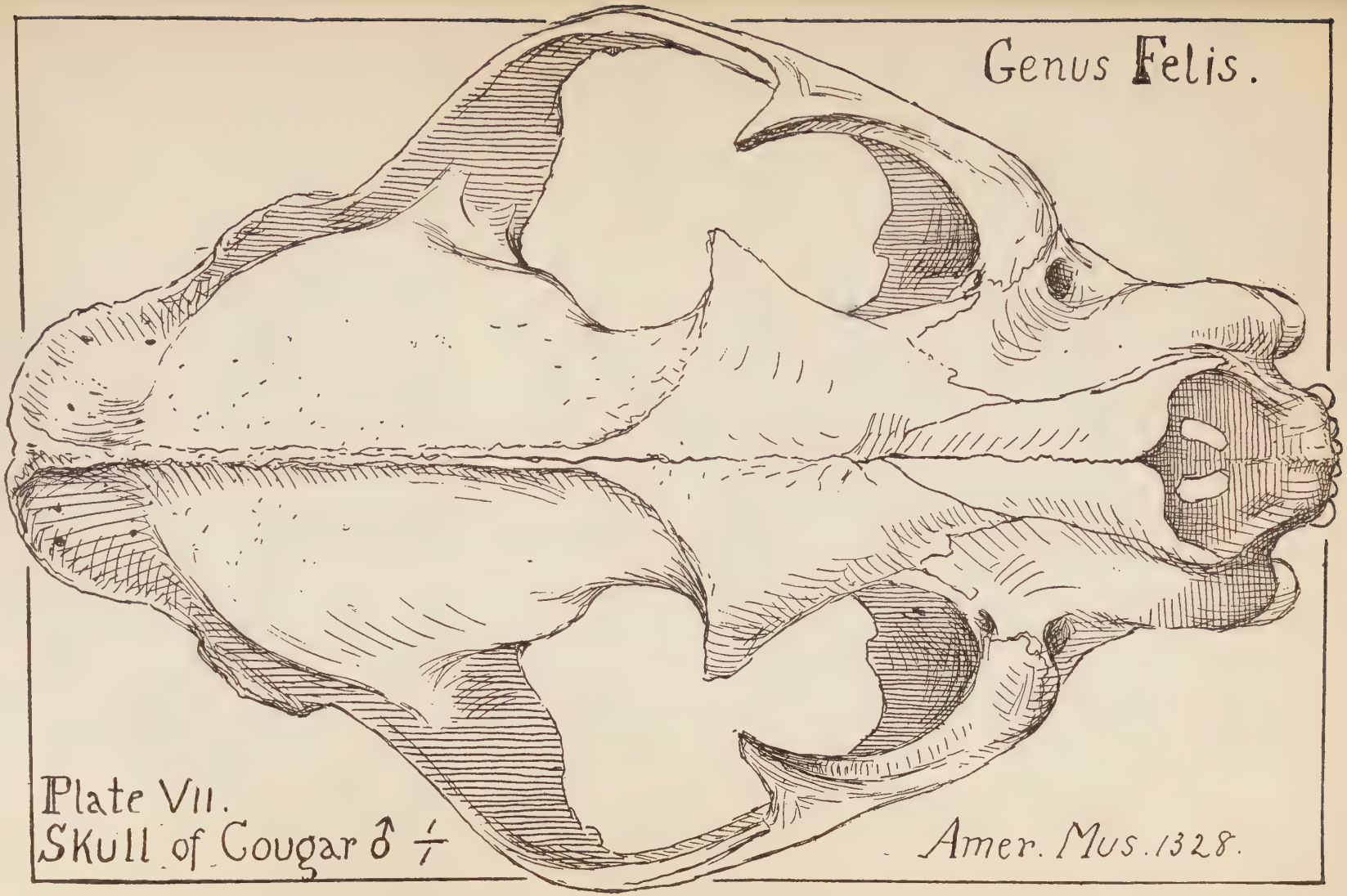

Plate VII.
Skull of Cougar ♂ ¼

Amer. Mus. 1328.

Races

The following North American Cougars have been recognized:

couguar Kerr, the typical form, a middle-sized yellow animal with a small head. T. l., Pennsylvania.

coryi Bangs, a large animal with large head and intense reddish colour. T. l., Brevard County, Fla.

arundivaga Hollister, a large animal like *coryi* but lacking the bright red colour; like *azteca*, but darker and with a dark back stripe. T. l., Vidalia, La.

hippolestes Merriam, very large; largest of all and of pale colour. T. l., Wind River Mountains, Wyo.

olympus Merriam, similar in size to *hippolestes*, but very dark in colour. T. l., Olympic Mountains, Wash.

browni Merriam, a pale gray and smaller race of *hippolestes*. T. l., 12 miles south of Yuma, Ariz.

azteca Merriam, smaller than *hippolestes* and no white beneath. T. l., Colonia Garcia, Chihuahua, Mex.

improcera Phillips, a small animal, smaller than *browni*, but with very large teeth. T. l., Calmalli, Lower Calif., Mex.

S. N. Rhoads considers that all of these North American Cougars are races of one species. For the purposes of life-history, at least, I prefer to accept this view.

In Central and South America, half-a-dozen other forms have been described, including *Felis concolor* Linnæus.

History

Purchas cites Acosta (1590) as authority for the following: "Of the Beasts in America . . . they have Lyons, but not like in greatneſſe, fierceneſſe, nor colour, to thoſe of Africa. . . . The Lyons are gray, and uſe to clime Trees; the Indians hunt and kill them."[11]

This quite accurate notice is the earliest I find for the Cougar.

John Josselyn's meagre account implies only that there were Lions in New England, but that they were extremely rare.[12] In his "Voyages,"[13] he mentions the reported killing by a Lion at Piſcataway, near Cape Anne.

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[11] Pilgrimage, 1617 ed., p. 909.

[12] New England's Rarities, 1672, pp. 57–58.

[13] Voyages, 1674, p. 22.

The name "Lion," applied by the early explorers, led the historians to look for a creature with a mane. The maneless skins were assumed to be the females; hence, the following:

Adriaen van der Donck writes: "Although the New-Netherlands lay in a fine climate, and although the country in winter seems rather cold, nevertheless Lions are found there, but not by the Christians, who have traversed the whole land wide and broad and have not seen one. It is only known to us by the skins of the females, which are sometimes brought in by the Indians for sale; who on inquiry say, that the Lions are found far to the southwest, distant 15 or 20 days' journey, in very high mountains, and that the males are too active and fierce to be taken."[14]

[14] A Description of the New-Netherlands, 2d edition, 1656. Coll. N. Y. Hist. Soc., I, 1841, p. 167.

Range of the Cougar with Map

The north line on the map gives the limit of its regular range, the spots are the interesting or extra-limital records cited herein.

Those who have worked on this subject will miss a number of long-current records. They were omitted because investigation proved them erroneous.

The South American species, including *Felis concolor*, are omitted.

In its various forms the Cougar ranges in the half wooded or rugged country from about N. lat. 50° southward over the North American continent, Central America and South America as far south as the Strait of Magellan. Thus it has the most extended distribution of any of the great Cats, covering more than one hundred degrees of latitude. The map indicates sufficiently the range in North America.

Dr. F. W. True in his paper on the Puma (1891) gives records for every State in the Union except New Hampshire, Rhode Island, New Jersey, Delaware, and Nevada.

These gaps are filled for the United States by S. N. Rhoads' New Jersey records,[15] C. H. Merriam's for Rhode Id.,[16] Stone & Cram for New Hampshire,[17] J. C. Adams for Nevada.[18] And since Delaware is surrounded, it surely was at one time inhabited by the species.

Thus it is clear that in primitive times the Cougar inhabited every part of the United States in which there was some cover and a sufficiency of food the year round. I have outlined the normal range; that is, the area of general distribution, and will refer in detail to those occurrences only which are beyond that, beginning at the extreme east.

[15] Mamm. Penn. & N. J., 1903, p. 132.

[16] Wash. Acad. Sci., Dec. 11, 1901, p. 577.

[17] Am. Anim., 1902, p. 290.

[18] Adv. of J. C. Adams, p. 246.

40 years ago, on Croil's Island, on the south side of the St. Lawrence River, opposite Farran's Point, about 10 miles east of Morrisburgh, with an iron spike or nail. The youth killed the animal with a single shot, a sporting exploit sometimes found difficult of accomplishment by experienced hunters.

"About one hundred years ago the Panther was found in every part of [southern] Ontario and Quebec. I have been assured, by reliable authority, that about forty years ago (1847) two large specimens were frequently seen near the Village of Lachute, in the Province of Quebec.

. . . . . .

"On two or three occasions, many years ago, I heard in the thick forest near the Village of Richmond, and afterwards in the Township of Huntley, some strangely startling and frightful screams, which I attributed to the Cougar. Be this as it may, I have heard no screams of the same kind for the last 30 years."[23]

Sorel. "The following was handed to the writer by H. R. Gray, Esq., of Montreal, just previous to going to press. 'On October 3d, 1863, as Jacques Gamelin of la Baie Lavallières, or St. Francis, on the River St. Lawrence, and two other men, were proceeding in a *bateau* to Sorel, C. E., being at the time about four arpents (acres) from land, they were suddenly attacked by a large Panther which swam off and succeeded in laying hold of the boat. Not having firearms or other defensive weapons on board, they were obliged to resist the attack with a boat-hook and oars, and after a lengthened struggle, during which the animal displayed great obstinacy combined with strength, he was killed, but not before he had succeeded in getting his powerful forepaws on deck; not being able to make his accustomed spring, in consequence of his hind-quarters being under water, he was incapable of injuring either of the men. He fell into the possession of, and was stuffed by, Mr. Craig the well-known taxidermist.' Its weight was 131 pounds and it measured 3 feet from tip of the nose to the root of the tail."[24]

Ontario

St. Catherine. Major W. Ross King says:[25] "I have only seen in Canada one specimen of the Puma (*Felis concolor*) and that was shot a few miles from St. Catherine by Doctor Maitland, R. C. R."[26]

He adds: "It is a most destructive enemy to Sheep, killing sometimes

[23] Ottawa Naturalist, I, p. 127, 1887.

[24] H. B. Small: Animals of N. A., 1864, p. 49.

[25] Sportsman and Naturalist in Canada, 1866, p. 16.

[26] As above, p. 17.

scores in a single night in apparent wantonness, and on this account has always been systematically hunted down by the farmers, so that it is not to be wondered at that it should have so greatly diminished in numbers in Canada of late years that at the present day it is only found in the largest tracts of wood, and at rare intervals."

Audubon and Bachman saw "a specimen procured in upper Canada"[27] and state[28] that it "is found sparsely distributed over the whole of North America up to about lat. 45°" which implies that the above specimen was from the Ontario Peninsula.

Near Temiscamingue. Thomas Anderson, Hudson's Bay Company's Chief Trader, told me in detail (1907) of a Cougar occurrence in northern Ontario in the fall of 1879. Ogushen, a well-known and reliable Indian, found tracks of a large Cat at Lac des Quinze. He saw them all winter on South Bay of that lake. One day he came on the place where it had killed a Caribou. When he returned the following March he saw the creature and it came toward him. It was evidently a Cat longer than a Lynx and it had a very long tail which swayed from side to side as it walked. He shot it dead, but feared to go near it believing it to be a Wendigo (*i.e.*, an embodied evil spirit). It had a very bad smell. Anderson says it was undoubtedly a Puma, but it was unknown to the Indian. Ogushen was a first-class hunter and was telling the truth, as Anderson firmly believes. Lac des Quinze is 15 miles north of Lake Temiscamingue.

Scarboro. In the *Biological Review* of Ontario, for April, 1894, vol. I, no. 2, p. 18, the Rev. John Doel of Toronto tells of a fine large Panther that was shot in the township of Scarboro, northeast of Toronto, Ont., prior to 1820. The specimen was among his father's possessions for some years, till in 1843 it was lost in a fire. It was 6 feet 10 inches in total length, of which the tail was 2 feet 3 inches.

Toronto. Doel also tells of a man named Burkholder having a fight with a Panther on Baldwin's Hill (now in the city of Toronto), in 1826.

Thornhill. He records further that a woman at Thornhill, 12 miles north of Toronto, saw a Panther in her garden one morning about 1854. Afterward it was followed all day by hunters who saw it several times but failed to get it.

Crosby. According to the same authority, about 1847 one Thomas Leggatt of Crosby township, County of Leeds and Grenville, met a Panther in the woods. In fall of the next year John Singleton of the same place heard the animal's yells, and later saw a large yellow creature with a long

[27] Q. N. A., II, p. 312.

[28] As above, p. 307.

PLATE VIII.—COUGAR FAMILY, FROM LIFE
By Ernest Thompson Seton. Toronto Zoo, 1885

tail pursuing his Dogs. After that it killed his "Pigs, Sheep, and young Cattle." It was seen several times and fired at, but not secured.

Ops. In 1853 the Rev. John Doel was told reliably of a recent adventure with a Panther in Ops Township, Victoria County (60 miles northeast of Toronto). It was several times seen and hunted, but escaped.

Cobourg. John Calcutt in the publication cited above (p. 23), tells of Dr. James Pringle coming into the town of Cobourg (about 1838) with an account of a Cow just killed and dragged off by a Panther in the woods near by. The exploits of the animal and the many futile hunts after it are given in full detail, but the animal eluded all pursuit. It was probably accounted for at Grayton (see below).

Grayton. During the hunt after the Cobourg Panther mentioned above, abundance of tracks and killings as well as Panther yells were noticed. Then a resident reported the presence of fresh traces on his farm, and described the terror they inspired in his hounds. A new hunt was proposed. "While waiting to fix upon a convenient day and collect a party, news arrived that a couple of Panthers had been shot near Grayton a few miles further on. This settled the question. There were no more doubts as to the species of animals the marauders belonged to, for there they were, veritable American Panthers."[29]

Whitchurch. Dr. William Brodie gives full details of a Panther that prowled in the woods of Whitchurch, Markham, Uxbridge, and Pickering in the years 1839 to 1843, killing and dragging off Sheep, Pigs, and young Cattle.[30] It was seen at short range by Andrew Bullinger in the midsummer of 1839, and soon after by Daniel Baker, both of them accounted reliable men, as well as hunters, knowing all the common animals of the woods.

All of these eight records group themselves about Toronto.

Ottawa. "Rare. One large specimen was killed north of the city of Ottawa. This is the only record of the occurrence of this animal in Canada."[31]

Manitoba

Makinak. In Aug., 1904, N. C. Nead, the taxidermist at Dauphin, Manitoba, assured me that a Mountain Lion or Cougar was killed two or three years ago at Makinak where it had been preying on calves. "W. F. White, the taxidermist of Winnipeg, saw, or maybe got the skin."

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[29] John Calcutt, about 1838, reference above

[30] As above, p. 27.

[31] William Couper: Notes on Mammals of Canada, Forest & Stream, June 14, 1877, p. 300.

Riding Mountain. "There is said to be another in Riding Mt. now."[32]

Plum Coulee. At Brandon in Sept., 1904, C. C. Helliwell, the naturalist, stated to me that the Cougar or Deerkiller is undoubtedly found in Manitoba. Several have been killed in the Province. One was taken on Plum Coulee in the Souris Country in 1887 and commented on in all the Winnipeg papers. It had been killing calves and hogs. He himself followed its track for some way and found where it had stalked a Jackrabbit, crawling along a ditch, and at one place had stood erect on its hind-feet to look for the Jack.

Oak Lake. Another he says appeared at Oak Lake about 1892. It was seen by several persons but never killed.

Brandon. At Winnipeg, in 1904, Shaw Cottingham, the sportsman, told me that he has seen the skins of two Cougars killed in Manitoba. They were on exhibition at Carruthers' Store in Brandon.

Elphinstone. Dr. Gordon Bell of Winnipeg tells me that another was killed at Elphinstone, Riding Mountain, in 1904.

Swan Lake. According to the Winnipeg papers of May 10, 1905, an Indian named George Beattie, while out hunting near Swan Lake "last Friday," came across the track of an abnormally large Lynx, and on following it got a glimpse of a Puma but failed to get a shot at it.

All of these records are from the hilly region where Deer abound, and have in their favour the fact that they were made by expert hunters and taxidermists who are very familiar with the Lynx, but so far, I have not been able to see even a piece of hide or other material evidence of a Cougar taken in Manitoba. All the possibilities are favourable, and it is generally understood that the Tiger Hills in southern Manitoba and the Tiger's Head in the northwest were named after Cougars that frequented them.

Alberta

Crow's Nest. Geo. F. Dippie, the naturalist and taxidermist at Calgary, tells me that the Cougar is quite common at Crow's Nest Pass. He has a specimen taken just west of High River in the fall of 1909.

Panther Creek. A little north of Banff, about lat. 52° N., on the east slope of the Rockies, is Panther Creek, an affluent of the Red Deer, named after this species.

Banff. J. W. Milne, a Government Surveyor of the Bow River in western Alberta, 1883–84 met with a party of men in the summer of 1884 at the mouth of the Cascade River (Banff). They were greatly excited because they had just encountered a "pair of Mountain Lions."

[32] N. C. Nead, personal information.

Morley Mission. The son of Rev. McDougall, the Methodist Missionary, killed a very large Panther (8 feet in length).[33]

Kananaskis. In the autumn of 1884, J. W. Milne met with a Cougar on Morley Indian Reservation within a mile of Kananaskis River. He was roused by the cries of the animal. He is not sure that he saw it but found abundance of the unmistakable tracks in the snow the next morning. In the same region later one of the axemen had a clear view of the Cougar.[34]

Little Buffalo River. In the fall of 1907, when I canoed on the Athabaska River, my native guide Elzear Robillard, a man of intelligence and some education, told me that in 1902 an Indian hunter on Little Buffalo River killed a large animal that he called a "Lion." It was all liver-brown in colour and had a long tail with a brush on the end of it.

The river in question is a small tributary of the Athabaska flowing in on the west at about 56½° N. lat.

Athabaska River. "J. S. Edmonton reported seeing the tracks of one, on two occasions, near Boiler Rapid and Grand Rapid on the Athabaska, one winter during recent years, he thinks in 1897."[35]

British Columbia

Beavermouth (on C. P. R.). J. W. Milne, the surveyor—already quoted—gives a full account of several times seeing Panthers on the eastern edge of the Rockies at lat. 51° 30′, long. 117° W. and other near-by places, in the summer of 1883.

After giving the cases cited above and some hearsay evidence as to range, Milne says: "The northern point must be between lat. 52° and 56°. Possibly the Panther may be found on the head waters of the Athabaska in the neighbourhood of Yellow Head Pass near Mounts Brown and Hooker. Hunters and traders on the British Columbia side of the mountains report it is fairly common."[36]

Phillips' Peak. Dr. W. T. Hornaday gives records from Elk River Valley, Sulphur Springs, and Pass Creek in British Columbia, and after many inquiries, fixes the north limit of the Cougar as Phillips' Peak which is lat. 50°, long. 115° W.[37]

West Coast. According to John Fannin (and many other naturalists)

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[33] Christian Guardian, 1894, Toronto.

[34] Biol. Rev., Ont., Oct., 1894, vol. I, no. 4, pp. 81–83.

[35] Preble: Athabaska Mackenzie Region, N. A. F. 27, 1908, p. 208.

[36] Biol. Rev., Ont., Oct., 1894, vol. I, no. 4, pp. 81–83.

[37] Camp Fires in the Canadian Rockies, 1906, p. 304.

it is quite plentiful over all of Vancouver Island and on the mainland. "It is found but sparsely east of the Cascades to about 52°."[38]

In British Columbia, according to Fannin,[39] during the years 1890–96, 610 Panther bounties were paid. The annual numbers were 47, 71, 89, 122, 115, 166, showing a steady increase. But many more were killed, because sportsmen do not claim the bounty since it entails the mutilation of the skin.

In the same Province in 1914, 280 Cougar bounties were paid, according to the report of Consul-General R. E. Mansfield.[40]

Peace River Valley. The northmost record for the continent is sent me by Provincial Constable E. Forfar, of Hudson's Hope, dated Oct. 10, 1922. He says: "The Mountain Lion whose skin is in my possession was killed sometime in November, 1921, by a Beaver Indian named Dan. He was hunting Lynx with Dogs when the Dogs treed the Lion. Dan shot it with a .22 rifle, not knowing what it was. He asked me when he brought in the skin if they were dangerous. It was killed near the mouth of Cypress Creek, a branch of the Halfway River, the Halfway being a tributary of the Peace River, about 80 miles in a northerly direction from Hudson's Hope.

"The Lion was a mature male. The cased skin measures exactly 8 feet. Body measurements I have been unable to obtain. There were rumours of another one in the locality. This I have been unable to authenticate."

Forfar showed the skin to John A. Dresser, mining geologist of Montreal, who reported it to me, and added: "Other traces of this animal are recently reported from the vicinity of the Peace."

E. A. Preble tells me that his Liard River records must be withdrawn as errors.

[38] Nat. Hist. Br. Col., 1898, p. 8.

[39] Forest & Stream, March 6, 1897, p. 184.

[40] As above, Aug., 1915, p. 493.

Interesting Records in the United States

Maine

Norcross. Charles H. Daisey, the well-known guide of Camp Phœnix on Sourdnahunk Lake, about 50 miles from Norcross, was coming to the latter place early in the fall of 1907, when he met two Panthers and wounded one with his revolver, but it got away. He saw their track before and after the encounter and has no doubt that they were Panthers.

A Panther was seen in the neighbourhood later in the season by Frank Haskell, who followed the track a long way, accompanied by Capt. Robert Sawyer, but nothing further was seen of the animal.[41]

Baldwin. G. T. Ridlon recounts the killing of a Panther in Maine at Baldwin, but does not give the date.[42]

(See "New Hampshire Mammals," by Jackson, *Journ. Mamm.*, Feb., 1922, p. 13, where he refers to *American Field*, LXVI, p. 400.)

New Hampshire

Lee. About 1865 a "real Cougar" was shot between Lee and Epping, N. H., by a man who was out gunning in that town. He saw the creature on a big limb about 16 feet from the ground at short range. He fired a charge of bird-shot into its head, putting out both its eyes. After a terrible struggle, it died. He had the skin mounted.[43] To this Shaw adds: "When I saw it, it was in the basement of the First Methodist Church in Exeter. It was 3 feet high and about 9 feet long, including the tail."

Prof. C. F. Jackson, State College, Durham, N. H., writes Jan. 19, 1922: "This is absolutely authentic, as this splendid specimen is still in existence."

"In 1885," says Jackson further, "a specimen was taken in the White Mountains, which is the latest record I have for the State. Rumours have been heard from time to time of the Cougar occurring in Maine and in the Green Mountains of Vermont.

"Dr. E. W. Nelson, of the Biological Survey, has referred me to 2 records, one from Vermont and one from Maine. The latest Vermont record is furnished by Merriam in the Proc. of the Wash. Acad. of Sci.[44]

[41] Forest & Stream, June 27, 1908, pp. 1011–1012.

[42] Saco Valley Settl. & Fam., 1895, p. 402.

[43] Letter from Wear N. Shaw, of Kensington, N. H., to W. E. Cram, Jan. 19, 1915.

[44] 1901, p. 582.

"According to this record, the last one killed was in 1894. . . .

"It is not known whether the 2 Panthers referred to above are male and female, although this is probably the case. One was seen at very close range by Mr. H. T. Woodward of Berlin and was thought by him to be a male."[45]

Massachusetts

East Douglas. Under the heading "Mysterious Monsters," a correspondent sends a circumstantial account and a very exact description of a Panther which prowled around East Douglas, Mass., about Feb. 4, 1883. But no one got a shot at the animal.[46]

Vermont

In Vermont the Cougar has been of general occurrence and may linger even yet (1920). Zadock Thompson, after giving an accurate description of the animal under the name "Catamount," and indicating the range, says: "They were formerly much more common in Vermont than at the present day, and have at times done much injury by destroying Sheep and young Cattle."

Bennington. Dr. Samuel Williams, under the name "Catamount," describes fully and accurately the Cougar, stating: "Some years ago, one of these animals was found at Bennington," and killed after a lively encounter with Dogs. "These animals," he says, "have been often seen in Vermont; but they never were very numerous or easily to be taken."[47]

"Some years ago, one of these animals took a large calf out of a pen at Bennington."[48]

Roxbury. "One of the largest taken in this State, to my knowledge, was killed in Roxbury in Dec., 1821. It measured 7 feet from the nose to the extremity of the tail, and weighed 118 pounds."[49]

Manchester. On page 12 in the 1853 Appendix of his "Natural History of Vermont," the above author, after minutely describing an 86-pound male, says:

"The Panther here described was caught on the western slope of the Green Mountains, in the town of Manchester, Bennington County, on the 5th day of Feb., 1850." It was taken in a Bear trap by one Burritt. It had

[45] Jackson: New Hampshire Mammals, Journ. Mamm., Feb., 1922, p. 13.

[46] Forest & Stream, Feb. 15, 1883, p. 48.

[47] History of Vermont, 1794, pp. 86–87.

[48] Nat. Hist. Vermont, 1853, p. 37.

[49] As above, p. 38.

suffered days of starvation, hence its light weight. The skin was presented to the Museum of the University of Vermont, where it now is. Its forequarters were much filled with Porcupine quills. "This was the last and the only one which has been, to my knowledge, killed in Vermont for years."

Wardsboro. On Nov. 20, 1875, a Panther was killed at Wardsboro, Vt. The specimen is now in the Museum of the Boston Society of Natural History, where I saw and examined it Feb. 10, 1921. The following note apparently refers to the same animal.

West Wardsboro, Nov. 29, 1875. "A few days since, a Panther track was found and followed by fifteen men and some Dogs. They found the place where the creature had killed and eaten a Porcupine, and later, the Panther itself was discovered up a tree. It was killed after a lively fight. It weighed 105 pounds, and measured 7 feet from tip to tip."[50]

Brattleboro. The Rev. S. W. Powell writes from Wilmington, Vt., in the *Evangelist:* "One [Panther] that weighed 180 pounds was killed a year or two ago, I was told, and shown at Brattleboro."[51]

Weathersfield. "A few months since the writer saw another [Panther] that was captured on Pine Hill, in Weathersfield, Vt., Jan. 31, 1867. This specimen is said to have measured 7 feet from the tip of the nose to the tip of the tail, to have stood 2 feet 9 inches high, and to have weighed 122½ pounds. It had lived for some time previously on Ascutney Mountain, a few miles from where it was captured. Very good photographs of this rare animal taken from this specimen before it was skinned, can be obtained of Mr. J. D. Powers, of Springfield, Vt."[52]

Andover. During the fall of 1891, according to a Brattleboro newspaper, two men, while hunting ruffed grouse in the town of Andover, suddenly came upon a Panther, into which they emptied several charges of shot, apparently without serious result.[53]

East Enosburg. "Two years ago [1907] this summer, I saw a Panther track in East Enosburg, Vt., and about that time a farmer in that neighbourhood clubbed or stoned two of these animals away from a Deer.

"Up to 20 years ago, there were in that territory more Panthers than Bobcats, but now there are far more of the latter. Formerly the big Cats lived almost exclusively on Hedgehogs and the Great Northern Hare, and very seldom molested either Cattle or Sheep. We have the same animals here [Pasadena, Cal.] but we call them Mountain Lions. The Vermont

[50] S. W. G. [Sam. W. Goodridge] of Grafton, Vt.: Forest & Stream, Dec. 16, 1875, p. 300.

[51] Forest & Stream, Nov. 12, 1885, p. 306.

[52] J. A. Allen: Mamm. Mass., 1869, Bull. Mus. Comp. Zoöl., I, 1863–69, p. 153.

[53] Rev. Pumas, p. 582.

Cats are larger than those found here, as I have not seen any tracks as large as those seen in Vermont."[54]

Barnard. In Vermont apparently the Panther has been of regular occurrence though "it has never been abundant." Hon. John W. Titcomb, in his account of the animals of Vermont, gives the above, and states that the bounties paid show Panther to have been killed in the State in 1866, 1870, 1875, 1894. In the State Museum of Montpelier is a large Panther that was killed by Alexander Crowell in the town of Barnard, Nov. 24, 1881. It weighed 182 pounds. "Judging from occasional reports," he adds, "there are still a few Panthers roaming our forests."[55]

Sunderland. Harry Chase, County Game Warden, reports that Paul Deming of Arlington saw a large Panther in broad daylight within 25 yards of him near Kelley Stand in the town of Sunderland, July 28, 1909. Harry Chase himself and Warden Lozier corroborate the story as on the night of July 10th they had heard a Panther calling in that same locality.

Again on Aug. 27, Chase spent a week in the region and found the Panther's tracks in several different places about Beebe's pond, while others claim to have seen the animal.

Chase mentions that another (as already recorded) was taken at West Wardsboro some time ago.[56]

Green Mountains. This territory seems to have been the last resort of the Panther in New England. "Prof. Geo. H. Perkins of Burlington, Vt., writes me that Panthers were killed in that State in 1870, 1875, 1881, 1894, and that hunters believe that a few still exist in the Green Mountains."[57]

Rhode Island

In the Boston Society of Natural History Museum is a mounted Panther, marked "from Rhode Island."

New York

The Adirondack Mountains have long been noted as a last stronghold of the Panther. Though now practically exterminated, odd ones are reported. John B. Burnham, Chief Game Protector, says (Aug. 28, 1909): "I have heard from time to time reports of Panthers having been seen in the Adirondacks within the past ten years. Eight or ten years ago Panther

[54] N. P. Leach: Forest & Stream, Sept. 11, 1909, p. 412.

[55] Animal Life of Vermont, The Vermonter, June, 1901, p. 198.

[56] Forest & Stream, Aug. 14, 1909, p. 251; Oct. 2, 1909, p. 534.

[57] Rev. Pumas, p. 582.

tracks were seen in the mountains north of Elk Lake by Pell Jones." In 1888 Burnham saw the carcass of a Deer killed apparently by a Panther, west of Mount Marcy. In the Game Warden's office at Albany is a mounted specimen killed by Verplanck Colvin on Sumner Stream on Feb. 15, 1897. On Dec. 27, 1889, a Panther was killed in the Adirondacks and bounty paid therefor.

In 1894, Game Protector R. B. Nichols saw a Panther on his farm on Cedar River seven miles above Indian Lake Corners. Several other persons saw it plainly by daylight.[58]

Adirondacks. In the last week of August, 1903, Dr. G. J. Van Vechten of Oneonta, N. Y., and James Murray of Utica, N. Y., saw "a fine specimen of a Panther," in broad daylight, near Dart's Camp, on Eagle Bay Road, Big Moose, N. Y. Full details are given by Harry V. Radford in *Field & Stream*, Xmas No., 1903, pp. 671–73.

New Jersey

"Originally found in every part of both States [N. J. and Penn.] but always more abundant in the Alleghany Mountains. In New Jersey, it became extinct in the early part of the 19th century, the last probably occurring in Sussex or Warren counties, as strays from northeastern Pennsylvania. No dates of their extinction in New Jersey have been secured."[59]

Pennsylvania

"In Pennsylvania they have not been killed, so far as I can substantiate the accounts that have been published, since 1871, though one statement would imply that 2 have been killed in Clinton or Clearfield counties in 1891."[60] He also gives details of Panthers found in Pennsylvania, 1875, 1877, 1886, 1893.

Eagleton. One of the latest records describes a whole family of Cougars or Panthers, seen by Senator Richard S. Quigley of Lock Haven, Pa., in the early summer of 1900, near Eagleton, Clinton County, Pa. Senator Quigley, at that time a youngster of about 14 and an ardent sportsman, was on a fishing trip with a man named Daniel Kunes of Blanchard, Center County, Pa.

"We were," he says, "within about 2 miles of Eagleton, walking along a very narrow brushy road. On making a sharp turn in the road, ahead of us about 100 yards on a very sandy place were 4 very strange animals playing

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[58] Forest & Stream, Sept. 4, 1909, p. 374.

[59] S. N. Rhoads: Mamm. Penn. and N. J., Phila., 1903, p. 128.

[60] As above.

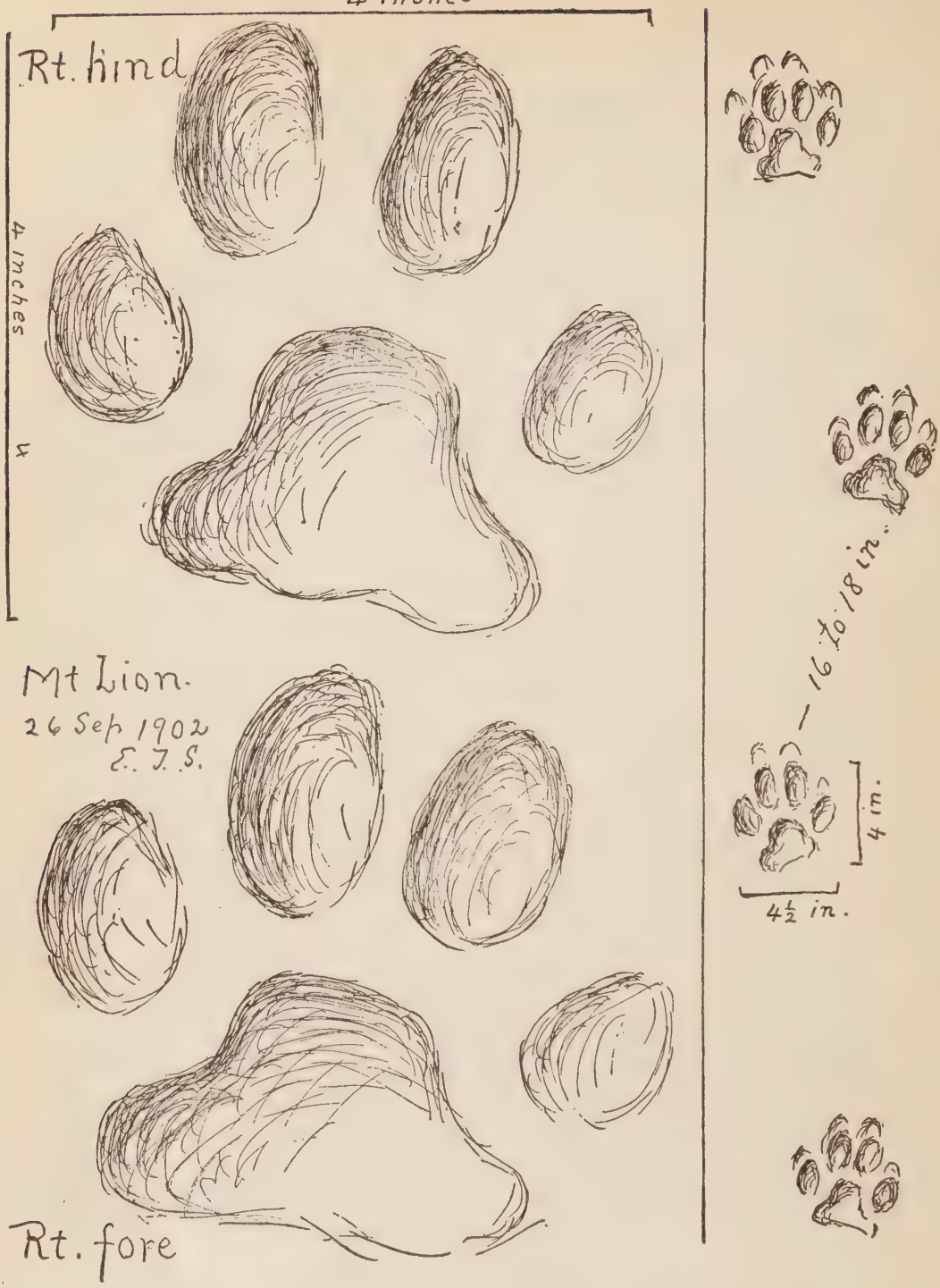

PLATE IX—COUGAR TRACKS

A large male in Bitterroot Mts. Cougar tracks are much like those of other Cats; size is the principal difference. But those of the Cougar are less stubby than those of the Jaguar.

in the sand, evidently sunning or dusting themselves. Two were very large animals for that section of the country, and 2 were smaller, evidently a family of Cougars. . . . They were of a very tawny colour, the larger beasts in the body being 4 or 5 feet long with long tails. Of course, we knew right away they were not our ordinary Wild-cats, as they were much too large, also had long tails. We had a very good chance to observe them as they were frolicking about, and they did not notice our approach for some little time. When they saw us they bounded into the brush to the left of the road and we ran after, following them into the brush, hoping to get a shot at them with the guns we carried. But we saw nothing more of them."[61]

According to Col. Henry W. Shoemaker's "The Pennsylvania Lion or Panther," 1914, p. 35: "Potter County newspapers in 1911 recorded that the cries of a Panther were heard in the vicinity of Sweden Hill, near Coudersport, in the autumn of that year."

The cries alone are poor evidence. Lynx, Wild-cat, and hoot-owl all make wails and yells that a Cougar need not be ashamed of. However, better proof is coming.

"Panther tracks," he says, "were observed on the [Coudersport] Pike by Dr. Rothrock in 1913; in Detwiler Hollow in the Seven Mts. in the same year, by several hunters. . . .

"In November, 1913, several farmers heard Panther cries and one reliable person saw a Panther in his barnyard in Logan Valley near Altoona. Johnstown papers reported a Panther as doing much damage to Deer and other game on Laurel Ridge, in Somerset County, in the same month. There is probably a Panther path leading into Pennsylvania from the Maryland and West Virginia mountains. This is proved by the killing of a Panther in Nov., 1913, several miles north of Washington, D. C."[62]

In 1914, H. W. Shoemaker visited at the home of Aaron Hall, known as the Lion Hunter of the Juniata, slayer of 50 Panthers between 1845 and 1880. There were fragments of the hides of 11 Panthers in the attic, which were presented to him by the old Nimrod's sons and taken away in a burlap bag. Grant Hoover of Williamsport states that he was present when Hall brought in two gigantic Cougars in the late fall of 1878.

Shoemaker writes me that, even as recently as 1922, "a Panther watched the Askey family seated by their open fire, at Cold Springs, Center County. The next morning, they followed the tracks in the snow."

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[61] Personal letter, Nov. 20, 1923.

[62] Penn. Lion, p. 36.

West Virginia

In July, 1898, Andrew and John Moore, while fishing on Cranberry Mountain, W. Va., met a Cougar. Their description is very full and circumstantial; it is given in *Forest & Stream*, July 23, 1898, p. 64.

Kentucky

In *Trail Hound* magazine, Aug., 1923, Case Sharp of Coxton, Harlan County, tells of a recent hunt where his Dogs "trailed a Panther for 2 hours. But we had to let it go."

Florida

In Florida the Red Panther is still (1920) of general distribution. C. B. Cory, however, says that for one in 1898 there were 3 or 4 some 50 years ago. But the country is being drained and cleared at such a frightful rate that it cannot much longer persist.

Louisiana

Cougars were still fairly common in the wilder parts of the canebrake region of eastern Louisiana in 1904, according to N. Hollister;[63] and a few are doubtless found there to-day.

Arkansas

According to hunters that I talked with while in Arkansas, in 1920, the Cougar is still occasionally met with in the mountains in the northwestern corner of the State. But I was not offered any conclusive evidence.

Michigan, Upper Peninsula

Deerfoot Lodge. Near Taquamenow River, George Osborn, Charles Osborn, Mark Cady, and Ted la Londe caught a Catamount in a Wolf-trap; they photographed and killed it. It measured $5\frac{1}{2}$ feet in length.[64]

L'Anse. According to the Minneapolis *Journal* for Feb. 21, 1902, on that same date, "A Panther has been seen lurking in the vicinity of Silver River 7 miles from this village. The presence of the beast is enveloped in mystery. Hunting parties are taking to the woods in quest of the animal."

Ontonogan. Norman A. Wood cites a Panther record for Ontonogan County.[65]

[63] Louisiana Puma, p. 176.

[64] Sault Ste Marie News, Jan. 3, 1907.

[65] Mich. Mamm., p. 8.

Michigan, Lower Peninsula

Norman A. Wood cites Panther records for Washtenaw, Jackson, Oceana, Mason, Ingham, Montcalm, Allegan, Calhoun, Kalamazoo, and Eaton counties.[66]

Wisconsin

Black River. Dr. P. R. Hoy says (1882): "A few Panthers *Felis concolor* are yet with us; a straggler is occasionally seen. Benjamin Bones of Racine shot one on the headwaters of Black River, December, 1863."[67]

Northern Wisconsin. M. Strong says (1883): "Found rarely in the northern part of the State."[68]

Marinette County. "Mr. Geo. A. Williams of Cremlin, Marinette County, writes: 'Two Panthers were seen by Nelson and Albert Chapman and Ray Williams in this county on Jan. 2, 1909. This information is reliable.'"[69]

Douglas County. "Mr. Daniel Farnham of Manly, Douglas County, writes: 'There was a Panther killed in Douglas County about 3 or 4 years ago, and 1 shot at last winter but not killed.'"[70]

Minnesota

Pillsbury. J. Frank Locke in "Minnesota Game Notes" writes: "I recently had a bloodless encounter with a huge Panther, the only one seen in this locality for years."[71]

Sunrise. "The most recent occurrence of the Puma in Minnesota was in 1875 when a single individual was killed in Sunrise, Chisago County."[72]

Chippewa River. Capt. Jonathan Carver thus records meeting one on an island in Chippewa River: "The Tiger of America resembles in shape those of Africa and Asia, but is considerably smaller. Nor does it appear to be so fierce and ravenous as they are. The colour of it is a darkish sallow, and it is entirely free from spots. I saw one on an island in the Chippewa River, of which I had a very good view, as it was at no great distance from me. It sat up on its hinder parts like a Dog; and did not

[66] Mich. Mamm., p. 8.

[67] Trans. Wis. Acad. Sci., V, 1877–81, 1882, p. 256.

[68] Mamm. Wis., Geol. Wis. Surv. of 1873–79, I, 1883, p. 436.

[69] C. B. Cory: Mamm. Ill. & Wis., 1912, p. 282.

[70] As above.

[71] Forest & Stream, April 19, 1883, p. 226.

[72] C. L. Herrick: Mamm. Minn. Geol. & Nat. Hist. Surv. Minn., 1892, p. 68.

seem either to be apprehensive of our approach, or to discover any ravenous inclinations. It is, however, very seldom to be met with in this part of the world."[73]

South Dakota

Grand River (370 miles north of Yankton on the Missouri west bank). Dr. W. J. Hoffman says: "*Felis concolor*, American Panther, In-mu-tan-ka. Occasional specimens are captured in the oakgroves on Oak Creek. The skins are seldom brought to the trader's store to exchange, as they are valued by the Indians in the manufacture of quivers."[74]

Black Hills. "Nov., 1887. Said to be common in the wildest part of the hills, one young was brought into town by a hunter who killed the mother and the other young. I saw it Nov. 2, a few days after it was caught, and think it would have weighed about 8 pounds then. The hunter said that the old one had just killed a large buck Blacktail Deer." [75]

Montana

Dawson County. "Tilyou's Ranch, Dawson County, Sept. and Oct., 1887: one is said to have killed a number of Sheep lately about 20 miles from here."[76]

During the 4 years, 1907–11, C. E. Ordish, hunter, of Libby, Mont., with 2 Dogs killed 74 Cougars on Pipe Creek and adjoining country.[77]

Idaho

According to *Forest & Stream*, July 14, 1906, p. 57, Henry Honenkrat killed 8 Mountain Lions that season in the Cœur d'Alêne Mountains, east of Spokane.

Wyoming

While in Jackson's Hole, Wyo., in Sept., 1898, I was shown the skins of 6 Cougars recently killed within a few miles. At another ranch 7 were killed within two months during the late winter and early spring of 1898. Another man, Albert Nelson, had 2 fresh skins. Indeed, each hunter—and all the ranchmen are hunters—had some Cougar notches on his gun.

[73] Travels, 1796, p. 295.

[74] Mamm. Vicinity Grand River, D. T., Proc. Boston Soc. Nat. Hist., XIX, March 7, 1877, p. 95.

[75] V. Bailey: Trip through Minnesota and Dakota, Ann. Rep. Dept. Agr. for 1887 (pub. 1888). Rep. of Orn. & Mamm., p. 431.

[76] As above, p. 431.

[77] Forest & Stream, May 20, 1911, p. 776.

Frank Peterson, one of the best-known guides, was sure that not less than 50 have been killed in Jackson's Hole within 5 years; nearly all were from the east side.

Colorado

In Jan. and Feb., 1901, Col. Theodore Roosevelt killed 12 Cougars at Meeker. That is not counting 3 small kittens destroyed by the Dogs. In Sept., 1901, John B. Goff, of Meeker, Colo., told me that since 1888 he had killed 350 Cougars.

California

In the 12 years 1907–19, 3,627 Cougars were officially killed in the State of California.[78] On the same page we learn that Jay C. Bruce, the State lion-hunter, recently killed 8 in one month.

During the year ending June 30, 1918, the Biological Survey, U. S. Department Agriculture, according to its report, destroyed 85 Cougars in the West. The reports for the first 3 months of 1919 show that in California 111 Cougars were killed (which means that the rate of destruction is increasing.)[79]

[78] Cal. F. & G., April, 1921, p. 101.

[79] As above, July, 1919, p. 148.

The early writers speak of the Cougars as formerly abundant;[80] in considerable numbers, etc.[81]

We are fortunate in having more exact information supplied us by Col. H. W. Shoemaker: "The woods [of Pennsylvania] teemed with them."[82] And again: "[The Cougar] was found in great numbers in Lycoming and Sullivan [counties, Pa.] . . . Panther skins were as prevalent on the walls of old-time farm buildings as Raccoon skins are to-day. Almost every backwoods kitchen had a Panther coverlet on the lounge by the stove. Panther tracks could be seen crossing and re-crossing all the fields, yet children on their way to school were never molested."[83]

In Luzerne County, between 1808–20, bounties amounting to $1,822 were paid for scalps, probably representing 200 Panthers. "More than 50 of these superb animals were killed in one year."[84] "Sam. Askey of Snow Shoe, Center County, killed 64 between the years of 1820 and 1845. These were taken in a limited district, and all of this great hunter's neighbours were engaged slaying Panthers at the same time. During these 25 years it is estimated that 600 Panthers were killed in Center County."[85] Hundreds were slain in Susquehanna County, Wyoming County, Lycoming, Sullivan, Clearfield, and farther south, but less so in the less mountainous counties to the northwest. "In an early day in Center County, hunters who had killed 50 Panthers were of no rare occurrence."[86]

The climax of slaughter, wanton and criminal, is set forth by Shoemaker.[87] Here he tells of a great animal drive organized by one Black Jack Schwartz in the woods of Pennsylvania, near Pomfret Castle, on the West Mahantango Creek in 1760, in which were killed, "41 Panthers, 109 Wolves, 112 Foxes, 114 Mountain Cats, 17 Black Bears, 1 White Bear(?), 2 Elk, 98 Deer, 111 Buffaloes, 3 Fishers, 1 Otter, 12 Gluttons, 3 Beavers, and up-

[80] Bachman: Q. N. A., II, p. 307.

[81] Godman: American Natural History, 1842, I, p. 294.

[82] Penn. Lion, p. 22.

[83] As above, p. 23.

[84] As above, p. 22.

[85] As above, pp. 22, 23.

[86] As above, p. 24.

[87] As above, p. 25.

PLATE X.—LIFE STUDIES
By E. T. Seton, 1886, 1889, 1890

wards of 500 smaller animals."[88] The drive covered a circle of 30 miles in diameter; reference to the map shows that it must have included most of Snyder County.

This gives some idea of the comparative numbers of the large game in that region, though not an exact one, for the drive was against the predaceous animals, and it is improbable that the hunters killed all the Deer, Elk, Beavers, etc., that they could. Furthermore, it is likely that at least twice as many Panthers escaped as were killed, for the 200 hunters who made the drive were on a 100-mile circle at the beginning; that is, half a mile apart in thick woods.

These records tell a story of whiteman's senseless destructiveness and redman's righteous indignation not surpassed in the annals of America.

"The choicest hides were taken, together with Buffalo tongues, and then the heap of carcasses 'as tall as the tallest trees,' was heaped with rich pine and fired. This created such a stench that the settlers were compelled to vacate their cabins in the vicinity of the fort, three miles away. There is a small mound, which on being dug into is filled with bones, that marks the spot of the slaughter, near the headwaters of [West] Mahantango Creek. Black Jack's unpopularity with the Indians was added to when they learned of this animal drive. The redmen, who only killed such animals as they actually needed for furs and food, resented such a wholesale butchery. The story has it that the Wild Hunter was ambushed by Indians while on a hunting trip and killed.[89]

. . . . . .

"After the great slaughter at Pomfret Castle, many backwoodsmen appeared in full suits of Panther skin. For several years they were known as the 'Panther Boys,' and in their old age they delighted to recount the 'big hunt' to their descendants.

. . . . . .

"The Panther uniforms were abandoned because they became favourite targets for skulking Indians. The savages, infuriated by the arrogance of the white newcomers, spared persons falling into their power occasionally, but gave no quarter to a 'Panther Boy.' The great slaughter of animals indirectly kept alive ill feeling between the two races in the region of the Firestone Mountains, and probably a dozen settlers lost their lives because of it. However, they went on with their animal drives, as the hardy settlers loved to do what the Indians hated."[90]

[88] Penn. Lion, p. 26.

[89] As above, p. 27.

[90] As above, p. 27.

Did human hand ever set on paper a more loathsome story of insensate destruction? These vile butchers did not need the meat, or the hides, for they destroyed them. They did not seek the real joys of the chase, for the joys were over before the massacre began. There is no such joy in a shambles. They did not need the land, for it was one mountainous primeval forest. No one pretended that the wild things were a serious menace.

There was no courage in the vile undertaking, for the whites far outnumbered the Indians and had much better weapons. There is absolutely no shadow of excuse, and the names of Black Jack Schwartz and his bestial accomplices must be held up to the reprobation of decent men for all time.

The shameless and deliberate way in which these creatures desolated their country is sufficiently indicated in this sentence: "Animal drives did not cease with Black Jack's death, but in some localities they were held annually until game became practically exterminated."[91] The last "ring" hunt or animal drive was held in Center County, Pa., in 1849.

And this was exactly the same thing as the Government did in our day out West. The soldiers had orders to slaughter all the game they could all the time, especially Buffalo, because so long as the game abounded the Indian could not be controlled.

There are few available figures to illustrate the slaughter which undoubtedly proceeded along the same lines in other States. J. R. Simms records that Thomas Meacham, a trapper who died about 1849, killed 77 Panthers during his hunts in the Adirondacks, N. Y.[92] Merriam records in 1883 that the hunter E. L. Sheppard had killed up to that time 28 Panthers in the Adirondacks. But that covered a number of years and was merely the rounding up of the remnant. This author believes that nearly 100 Panthers were killed in the Adirondacks between 1860 and 1883.[93]

Referring to the same region, G. S. Miller says that from 1871 to 1897 inclusive, 107 Cougars were killed officially in or about the Adirondacks, N. Y. The latest was in 1890, probably the last of the race, as none have been killed there since.[94]

A wonderful picture of primitive life in Central Kansas is given by Z. M. Pike when at the headwaters of Grand River between the Kansas and

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[91] Penn. Lion, pp. 26–27.

[92] Trappers of N. Y., 1850, p. 271.

[93] Mamm. Ad., p. 39.

[94] Mamm. N. Y., 1899, p. 339.

the Arkansas, Sept. 12, 1806.[95] He says: "Standing on a hill, I beheld in one view below me Buffaloes, Elks, Deer, Cabrie, and Panthers."

The ideal Panther conditions are seen in the northwest corner of California to-day, where the favourite cover and food abound; that is, heavily forested rugged hills with plenty of Deer.

In this region, Humboldt County with its 3,500 square miles has paid 505 Panther bounties in 10 years, and still its numbers stand the drain. As will be seen later the estimated annual increase of the species is only 10 per cent. This argues a present population of 500, or, say, 1 to every 10 square miles.

Since writing this I learn that in California where, taking the entire State, Cougars are no longer plentiful, their total number is set at 575.[96] But the Pennsylvania drive proves a much higher rate of population, probably double, so that we begin to realize the meaning of the old historians when they write that Panthers "abounded," were in "teeming numbers," etc.

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[95] Exploratory Travels, 1811, p. 177.

[96] Cal. F. & G., Oct., 1917, p. 165, and April, 1921, p. 99.

Present Numbers and Distribution

The shaded areas on the map indicate where in general the Cougar is found to-day (1920). In the region of darkest tint, it is considered fairly numerous. In the Eastern States, it is virtually extinct. If there is a pair of Cougars in the Green Mountains, Vt., now, it is the highest possible number. If there are 6 pairs in the mountains between the Catskills and Georgia, I should be agreeably surprised. In the section on "Interesting Records," I give all I can find in recent years for this devastated area.

In the Rocky Mountains, the big Cougar whose scientific name is "Horse Thief" was found in numbers as late as 1900; was most numerous in the famous Deer country of the Central Rockies; also along the Grand Canyon, and is still found in these regions.

In the mountainous parts of California, Arizona, Washington, Southern British Columbia, and Vancouver Island, the creature is still considered rather common. In British Columbia, as already noted, over a hundred are killed each year for the bounty, and still it continues. In California, where persistent exterminatory hunting is carried on, 200 or 300 are killed each year, and the authorities announce their determination to keep on to the end.

In all this melancholy chapter of ruthless extermination, this remorseless destruction of one of the most beautiful creatures that ever lived, I find but one note of comfort—that in spite of the wholesale slaughter, "these animals are still abundant in most of the [northern California forest] counties. . . . Nor, notwithstanding the apparent decrease in numbers, is the Mountain Lion yet under control, and it continues its depredation not only on Deer, but on domestic stock."[97]

Nevertheless, the destroyers have so far succeeded that in 1921, as already noted, the total Cougar population of California was estimated down to 575, and I doubt if there are 5,000 of the species alive in America to-day, north of the Rio Grande.

Haunts

The favourite haunts of the Cougar are rugged mountains with forests in which Deer are abundant. It is also found in level or half-wooded

[97] H. C. Bryant: Cal. F. & G., Oct., 1917, p. 160.

country that is plentifully supplied with wild turkeys, or uplands where Mountain-sheep are in numbers, but these are not its ideal conditions. It is probable that it was originally found in the greatest numbers in the rugged parts of the teeming Deer forests between the Mississippi River and the Alleghany Mountains, and between the coast range and the ocean from Northern California to lat. 52° in British Columbia.

Home Range

There seems little doubt that the Cougar is one of the widest ranging of all our big game.

The smallest range of the individual is that of the female when the cubs are too small to follow her abroad. Then she must stay near home. At this time, according to Harold C. Bryant, she hunts within a radius of 5 miles of the den.

But later in the season, when the young can travel, or in winter when game is scarce or moving, it is very different and the family may travel 20 or 30 or even 50 miles from their headquarters which is the neighbourhood of the home den. The lone male especially is a wide roamer.

Bryant says: "One in Trinity County when followed was found to have covered a distance of about 20 miles in 3 days. The same beat is often used for a long time."[98]

John B. Goff told me of more than one Cougar that he followed for 36 hours before coming up with it; this meant a circuit of over 50 miles.

H. G. Hayes[99] tells of following a Cougar for 6 days, and Col. Shoemaker[100] records a hunt which lasted for nearly two months before the Cougar was brought to bay.

The occasional appearance of Cougars in the Green Mountains, Adirondacks, Laurentians, or the Riding Mountains in Manitoba, where the species had probably been exterminated, seems to show that when food is scarce this animal will roam for a hundred or even several hundred miles. This depends almost entirely on the abundance or scarcity of game.

The Hide

It has been my lot once or twice to see a Cat killed by a Dog, and though many bones were broken in the battle, the skin of the victim never was. In skinning Cats I have noticed each time the toughness of the hide, especially on the forequarters and neck of the male.

[98] Cal. F. & G., Oct., 1917, p. 161.

[99] Forest & Stream, July, 1917, p. 306.

[100] Penn. Lion, p. 39.

So it was without suprise that I read in Roosevelt's account of killing the last of his twelve Cougars: "Neither in this nor in any other instance," he says, "did any one of the Dogs manage to get its teeth through the thick skin. When Cougars fight among themselves, their claws and fangs leave great scars, but their hides are too thick for the Dogs to get their teeth through."[101]

It is quite generally understood and accepted among the old hunters that when a Cougar skin is found cut, slashed, or scarred, the wounds were received in combat with one of his own species.

The Flesh

Samson's riddle, "Out of the eater came forth meat," seems most apt for the Cougar. Strange to relate, for the case seems unique among flesh-eaters, the meat of this animal is excellent eating. This is mentioned by most of the early writers—all who have tried it indeed—and I can add my testimony to the record.

Among the old-time hunters of this vanishing creature the tradition still persists of a feast on the animal's flesh as the proper finish to a successful hunt.

I never tried the meat at that supreme moment, but if it is good, it must be very different from Bear's meat in all its reactions, for I do not know of any flesh more repulsive, or even dangerous, than that of an old Bear that died fighting Dogs and men.

The Tail

Old Joseph Wolf, the celebrated animal painter, was one of my teachers in animal drawing, and I shall never forget the day we stood before the Cougar cage in the London Zoo while he voiced his admiration of the Cougar's long, expressive tail.

"Look at those miserable switches," he said, as he pointed in scorn at the Tigers' tails in the next cage.

"Why, the smallest Cougar has a finer tail than the biggest Tiger. It's grand, it's full of character, it is next in size to that of the Lion, or relatively far larger."

Yes, the Cougar should be proud of his tail. But what is it for? That I never could make out. A Fox's tail is a muffler when he sleeps, a Squirrel's is a parachute, a Monkey's tail a balancing pole when he walks aloft, but the Cougar needs none of these things, and I have many notes that show the tail to be a handicap to him.

[101]Scribner's, Nov., 1901, p. 547.

Roosevelt tells of a powerful she-Cougar that was escaping up a tree from the Dogs, when "either Tony or Baldy grabbed her by the tip of the tail, she lost her footing for a moment, and the whole pack seized her."[102]

Charles J. Lisle relates how one of his Dogs attacked the Cougar's head and then seized its flank while a third "bit its long tail."[103]

Bachman writes of a Cougar at bay which got hold of the hunter's Dog and would have killed it but the man seized the beast by the tail, "and broke his back with a single blow of the axe."[104]

Judge D. C. Beaman of Denver tells of a big Cougar at bay on a down tree. "When he squatted, his tail hung within reach of the Dogs and one of them took a fly at it, and came near bringing the old fellow out. Then he had to stand up to keep his tail out of reach."[105]

The most amazing incident of this kind is supplied by Hugh Johnson, who describes a wilful little hunting Dog that he had; a Dog that might have been the prototype of "Skookum."[106] "A number of times," he says, "I have seen him overtake a Panther, and catch the end of its tail in his mouth, stick out his feet and make the Panther drag him through the snow. Of course, that would make the Panther mad, and it would slow up and turn around and try to kill the Dog. But when it did this, it always found when it made a stroke at him with its paw, that he was not there. He was somewhere else."[107]

All of which observations seem to stigmatize the tail as a handicap, a nuisance to its owner, and therefore in no way justifying the forces that developed that long, massive, and conspicuous appendage. Its thick coat of fur and black tip make it look larger than it is, but they do not add to its length. It seems probable that the immense tail is a "left-over" from some early ancestor, arboreal or aquatic, to whom it was really of service. At present its only use seems to be as an organ of expression and a plaything for the cubs. The tail-lashing when at bay is noted by all observers, as well as the kittenish upcurl in frolic.

There is also a ceaseless, nervous snaky twisting of the tip that may have a meaning. A Cougar is stalking a Deer. Another Cougar comes along and not knowing of No. 1 being there, proceeds to stalk same Deer. Coming from the same direction, that is, working up wind, No. 2 might

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[102] Scribner's, Nov., 1901, p. 548.

[103] Field & Stream, Jan., 1915, p. 933.

[104] Q. N. A., II, p. 311.

[105] Sports Afield, Mar., 1900, p. 204.

[106] Rolf in the Woods (Doubleday, Page & Co.).

[107] Forest & Stream, Oct. 5, 1907, p. 532.

easily mistake No. 1 for the Deer, and at least spoil the chances for both, before he found out the error. But long before that the unmistakable black tail-tip twisting behind and out of all ken of the Deer gives notice to No. 2 that the matter is already in excellent hands, so he goes about his business elsewhere.

Each of the Cats on this list (except the Eyra) has the tail-tip marked in some conspicuous manner—either black, black and white, or tufted, or all three—and each of them has this habit of tail-signalling, with the possible exception of the Eyra. Surely there is more than coincidence in this.

The Voice of the Cougar—The Panther Scream

Does the Panther scream? What long bitter battles have been fought over that question.

First, every one of the old historians who wrote about the species when it abounded, credits the Panther with uttering wild screams and half-human wailing sounds that can be heard a long way.

Careful natural history did not begin till the middle of the past century. Let us therefore not go farther back, but seek the opinion of modern naturalists beginning with Emmons, who says that "the Panther frequently utters a scream which can be heard for miles."[108]

Dr. C. B. R. Kennerly says that on the Mexican Boundary Survey, on one or two occasions the cry of the Puma was heard in the distance and Schott writes that after dark "his mournful note is heard resounding through the solitudes of the deserts. The note, listened to once attentively, is apt to make a deep, lasting impression. The different native names, as pronounced in Spanish, sound very appropriately to the note, and it is likely that the cry of the animal forms the base of its names. The note itself is often several times repeated with intervals of from 2 to 4 minutes. As night advances the cry is heard but rarely."

He also says that one which the hunters fought to death "raised a terrible cry twice or thrice, to express his rage, and perhaps also to give his family the notice of danger."[109]

Roosevelt says that near Kildeer Mountains he "twice heard a loud wailing scream ringing through the impenetrable gloom which shrouded the hills around us. My companion, an old plainsman, said that this was the cry of the Cougar prowling for its prey. Certainly no man could well listen to a stranger and wilder sound."[110]

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[108] Quad. Mass., 1840, p. 37.

[109] U. S. Mex. Bd. Surv., Pt. Mamm., 1859, p. 6.

[110] Wilderness Hunter, p. 343.

And again: "We did not hear the Cougars calling, for they are certainly nothing like as noisy as Wolves; yet the Mathes brothers had heard them several times, and once one of them had crept up and seen the Cougar, which remained in the same place for many minutes, repeating its cry continually."[111]

In similar tenor are the writings of Dr. J. A. Allen, D. G. Eliot, Dr. J. T. Rothrock, H. W. Shoemaker, and the testimony of scores of hunters. Grizzly Adams, one of our safest observers of big game, gives the following in connection with his Cougar hunt in Humboldt Mountains, Nevada, in 1854.

"As soon as it grew quite dark, our ears were regaled with a concert of Panther shrieks, quite astounding. We were so situated that every shriek was repeated by a dozen echoes, and the cañon fairly rung with terrific noises. We could also hear the beasts rushing along in the brush, but could not see them. At midnight it became more silent, but toward morning the concert was repeated; from which it appeared that the beasts had left their dens in the evening, hunted for prey during the night, and returned towards morning."[112]

Shoemaker states that 50 hunters and old-timers corroborated the statement that the Panther utters the wild cries attributed to him, then adds the final testimony of the late Dr. J. T. Rothrock, the well-known scientist whose medallion in the Capitol at Harrisburg was recently dedicated by Governor Pinchot: "That Panther cry—I have often asked myself how I could describe it, and failed to satisfy the inquiry, though I think I have at this very moment a somewhat clear remembrance of it. It would not be an adequate reply if I said it sounded like the wail of a child seeking something, a cry, distinct, half inquiry and half in temper. There was something human in it, though unmistakably wild, clear, and piercing. And yet I do not know how to make a more satisfactory reply, except to say that the cry seemed to be in all its tones about a minute long. I heard it one evening in Treaster Valley, repeated so often that I could recognize it as coming from an animal moving along the rocky slope of the mountain where no child could have been at that hour, and was told by those residents in the region, 'Oh, it's the *Painter's* cry.' It did not seem to be unusual to them. That was about twenty years ago."[113]

N. Hollister in his paper on the Louisiana Puma[114] has much to say about

[111] Scribner's, Nov., 1901, p. 556.

[112] Adv. J. C. Adams, p. 246.

[113] Penn. Lion, pp. 41–42.

[114] Proc. Biol. Soc., Washington, June 16, 1911, p. 177.

the Panther calls he heard, as two answered each other in the dark woods. "The cry is a long drawn out, shrill trill, weird and startling. It commences low on the scale, gradually ascends, increasing in volume and then lowers at the end."

Edward T. Martin tells of an Olympic hunt in which his party killed a Deer. "All that night the woman-like cry of a Cougar was heard as he trotted in wide circles around the offal, seeming to fear it was bait for a trap. He walked and wailed, and wailed and walked; his noise, the uneasiness of the Horses, and the growls of the Dogs making sleep impossible until coming daylight drove him into retirement."[115]

Enos A. Mills writes: "Of the dozen or more times that I have heard the screech of the Lion, on 3 occasions there was a definite cause for the cry—on one a mother frantically sought her young, which had been carried off by a trapper; and twice the cry was a wail, in each instance given by the Lion calling for its mate, recently slain by a hunter."[116]

Colonel Shoemaker writes me that "Cornelius Karstetter watched a pair of Cougars migrating across Sugar Valley, Clinton County, Pa., by their path in the fall of 1876. He saw them from his kitchen window, as they braced themselves and 'roared.' The Pennsylvania pioneers always speak of the 'roaring' of the Cougar."

Opposed to all these hundreds of witnesses I find four, Darwin, Bachman, Merriam, and J. C. Bruce. Their testimony is as follows: "It is a very silent animal, uttering no cry even when wounded, and only rarely in the breeding season."(Darwin)[117]

Bachman says: "The tales related of the cry of the Cougar in the forest in imitation of the call of a lost traveller, or the cry of a child, must be received with much caution, and may, in many of their exaggerations, be set down as vulgar errors. In a state of captivity we have never heard the male uttering any other note than a low growl; the female, however, we have frequently heard uttering a kind of mewing like that of a Cat, but a more prolonged and louder note, that could be heard at the distance of about two hundred yards.

"All the males, however, of the Cat kind, at the season when the sexes seek each other, emit remarkable and startling cries as is evidenced by the common Cat, in what is denominated caterwauling. We have observed the same habit in the Leopard, the Ocelot, and in our two species of Lynx. It is not impossible, therefore, that the male Cougar may at the rutting sea-

[115] Forest & Stream, Sept. 19, 1914, p. 364.

[116] Watched, p. 200.

[117] Voy. of Beagle, p. 270.

son have some peculiar and startling notes. The cries, however, to which persons have from time to time directed our attention as belonging to the Cougar, we were well convinced were uttered by other animals. In one instance, we ascertained them to proceed from a Red-fox which was killed in the hunt, got up for the purpose of killing a Cougar. In other cases the screams of the great horned, the barred, or screech owl are mistaken for the cries of this animal.[118]

Merriam, after throwing general discredit on the idea of Panthers yelling, says: "In conversing with honest hunters upon this point it has been my uniform experience to find that those who have had most to do with Panthers are the most skeptical in regard to their cries; and I have yet to find the man whose statements on this point are of any value that has ever heard a wild Panther scream. This is negative evidence, it is true, but it is by no means without value; and it is certainly safe to assert that at least 99 per cent. of the so-called 'Panther screams' emanate from a widely different source."[119]

This, however, was written in 1883. Since then Merriam has lived much in the mountains of California, and now concedes that the Western animal at least has a number of hair-lifting yells or screams.

Jay C. Bruce puts no faith in the stories of the Cougar's screaming and crying. He says: "No doubt, many people have heard yells in the night, and have honestly believed that they were listening to a Mountain Lion, but in the large majority of cases, it was a Coyote that they heard. Sometimes an owl will make a terrible noise, but Lions—never to my knowledge. I have seen them battling the Dogs, fighting in defense of their young, searching for a mate—under all sorts of circumstances—but never yet have I seen one while he was in the act of screaming. They growl and spit, like an angry Cat."[120]

As I read these conflicting statements I feel that each and every witness was stating the truth as he knew it and was right as long as he avoided sweeping generalizations.

Darwin had very few opportunities to observe the animal, certainly not during the whole circle of its annual life.

Bachman withdraws his own case when he admits that the male Cougar, like the other great Cats, may have some startling notes at the rutting time.

Merriam's observations were made in a region where the Cougar was

[118] Q. N. A., II, pp. 311, 312.

[119] Mamm. Ad., pp. 37, 38.

[120] Field & Stream, Oct., 1921, pp. 580–81.

rare and much hunted and many of his facts were supplied by the hunter Sheppard who followed the animal chiefly in snowtime. This evidence is strictly negative, as also is Jay C. Bruce's testimony.

Let me add my own positive observations. In the summer of 1885 I made for Merriam the Panther drawing now hanging in his house. During the three or four days I worked at it, the creature, a Colorado specimen, had frequent outbursts of yelling and caterwauling. The noise it made was terrific, amply justifying all the foregoing descriptions.

In the Zoo, London, England, Feb. 26, 1915, a female Puma from Cesquiera, Pernambuco, S. A., drew a crowd among which was myself, by keeping up a nearly continuous hoarse caterwauling, sometimes lowered to a growl and sometimes raised to an unpleasant human-like screech.

My sifting of the evidence gives these definite conclusions:

First, all of the large Cats that have been fully observed have a great variety of growls, snarls, yells, cries, roars, etc., to express varying emotions, as well as a prolonged strain or close succession of noises that serves as a song.

Second, any one observing a House-cat, only by the fire, prowling through the meadows, or caged at a Cat show, would describe it as a very silent animal and be utterly puzzled by the perfectly hideous performance of screams, yells, growls, and caterwauling with which they too often rob a neighbourhood of sleep.

Third, hundreds of good witnesses testify to the Cougar's cries and yells, while 4 good witnesses offer the negative evidence that they believe it to be a rather silent animal.

Fourth, I know that 2 caged Cougars yelled by the hour exactly as described.

My conclusion is that all the testimony is true. That the Cougar is sometimes a very silent animal, especially when hunting or hunted. But at other times, especially when signalling to its mate, when defying a rival, when making love, or when indulging in the song that is a mere expression of vigour, it has just as many sounds as the common Cat; they are of the same types as those of the Cat, but they are magnified and intensified to a scale fitted to the superior bulk of the Cougar; that is, about 20 times.

Finally, the individual variation is so great in these animals, that any general rule is sure to fail at times.

If any one were to catalogue and describe these various yells, squeals, growls, spits, and wails, he would have a list exactly paralleling the vocal score of a tomcat. Instead of attempting that, I shall cite three remarkable records.

"The unearthly wail of the Puma or Mountain Lion, [is] demoniacal and ghoul-like as no other sound in the wide realm of nature. As it re-echoes through the forests, you involuntarily shudder, for it is more like a woman's long-drawn and piteous cry of terrible anguish than any other sound you could liken it to."[121]

W. H. Pigg of Canyon City, Colo., with Dave Crouch and Frank Powers, went hunting a pair of Cougars 12 miles north of his town in Dec., 1911. They had shot the female and knew that the male was near. But night came on and they made for camp.

"On our way we heard, as we thought, Frank's 'Whoo-ee,' but got no reply to our answer. Again several times before reaching the top we heard the same 'Whoo-ee.' Each time one of us answered, but without reply.

"Frank had a nice big fire when we dragged our tired selves on top. 'What the deuce were you yelling so for? Were you afraid we were lost?' we asked Frank.

"'I have been sitting by this fire as quiet as a mouse. Ring had just arrived when I got up,' he replied.

"Dave and I looked at each other. Then we both understood; the sound we heard was the Lion calling for the dead mate."[122]

The last incident given by Hugh Johnson[123] has much of interest besides its notes on the vocal power of the Cougar.

The hunter was prospecting out in Washington; he had killed a Deer and camped for the night, as it began to rain.

"Before it began to rain I thought I heard a Panther call off to the west higher up on the mountain side, and a little while after I heard another faint call off to the east. I did not pay much attention to that, but soon I noticed that these animals seemed to be calling to one another and to be getting closer, and I reckoned that one of them had smelt my meat and was coming up to find out what it was that smelt so good. I was a good deal younger then than I am now and knew considerably less about Panthers, and I did not know but that they might come right into camp and take my Deer away from me. I would not have liked that, and I did not mean to have them do it. There was plenty of wood around and I packed in quite a load close to the fire and then began to pile it on. There were one or two small hard-wood trees not very far from the fire, and as the Panthers kept getting closer, I swung myself up into one of these and climbed up fifteen or twenty feet. From here I had a good view of the fire and a good view of the Deer.

[121] Baillie-Grohman: Camps in the Rockies, 1898, p. 83.

[122] Outdoor Life, July, 1913, p. 9.

[123] Forest & Stream, Oct. 5, 1907, p. 533.

"The Panthers kept calling and kept getting nearer, and after a while they seemed to be right close, not more than 50 or 60 yards from the fire. After they got right close they began circling my fire, still calling to each other. It was not very long before they evidently came together, and then they stopped calling and began to moan and holloa at each other, just about as a couple of common tomcats would, only with twenty times more noise. Then they seemed to have a regular tomcat fight, with hissing and spitting and caterwauling in great shape. After that it was quiet for a while and the fire was dying down, and then presently I happened to look over on the other side of the fire, and there, just within the circle of light, I could see a big Panther looking at my Deer. He looked mean and hungry and gray, as well as I could see by the fire, and he kept slowly crawling nearer to the Deer, not seeming to pay any attention to the fire.

"Presently, when he got about 10 or 12 feet from the Deer he sort of settled himself down into the ground to spring and I tried to draw a bead on him. It was not easy to see my sights in the dark, but I was looking toward the fire, and at last I drew rather a coarse sight and aimed well down toward the bottom of the Panther's body and shot. He gave a big jump toward the Deer, but did not reach it, and landed all doubled up at the foot of the tree the Deer was hanging on. After that he never moved. I sat up there for awhile, waiting to see what would happen, and then I climbed down and built the fire up again and hauled the Panther away and began to skin him.

"I felt a little nervous all that night, thinking maybe the other Panther would come around and show up, but he never did. I expect they had a fight and the big one scared the little fellow out of the country. The one I killed had a fresh bleeding scratch on his shoulder that I expect the other one had given him.

"I have heard that out in that country sometimes the male Panthers have terrible fights and sometimes one is killed by the Panther he is fighting."

Purring. So far as known, all small Cats purr, and none but Cats purr. This peculiar sound is thus explained by E. Kay Robinson of the English *Country-side Leaflet.* The climax of joy to any of the tribe is when it has gripped its victim by the throat and is drinking the life-blood. The hard breathing of the hunter as the warm blood gurgles down its throat produces the gargling sound known as the purr.

This, so long associated with extreme satisfaction, has naturally become the expression of pleasure.[124]

[124] Guide to Nature, April, 1915, pp. 363–64.

Plate XI. The Hunting Cougar.

Nevertheless Dr. W. H. Osgood of the Field Museum tells me that Lions, Tigers, Leopards, and Jaguars do not purr.

Marriage Customs

What are the mating customs of the Cougar? Is it promiscuous, polygamous, or monogamous?

Promiscuousness is so rare among the higher animals, and so excluded by evidence to be offered on the third possibility, that it need not be considered seriously, and is mentioned only because some few have charged the species with this low standard of morals.

I think it is a rule that among polygamous animals, the male is always much larger than the female, or wholly different in colour or armament; for example, Elk, Bighorn, Fur-seal, etc.; whereas, among monogamous animals, the sexes are alike, except that the male is larger and better equipped for securing the female by combat, as in Wolves, Foxes, Tigers, etc. According to this reasoning, the Cougar belongs to the monogamous class.

The first positive statement on the subject of polygamy is by Col. Theodore Roosevelt, who says: "In some books the writers speak as if the male and female Cougar live together, and jointly seek food for the young. We never found a male Cougar anywhere near either a female or a pregnant female. According to my observation the male remains with the female for only a short time, during the mating season, at which period he travels great distances in search of his temporary mates—for the females far outnumber the males. The Cougar is normally a very solitary beast."[125]

The statement that the females far outnumber the males does not agree with all the evidence. Thus, of the 111 Cougars killed in California in January, February, and March, 1919, 53 were males and 58 females. Merriam records the killing of 5 males and 23 females, while Edward G. W. Ferguson says "not 1 in 10 of the Mountain Lions killed is a female."[126] Ferguson is the only writer I find besides Roosevelt who thinks the species polygamous.[127] But he injures his case by claiming also that the male is the deadly enemy of the young, making it his business to ferret out and destroy all he possibly can, and usually with huge success. I have heard hunters tell the most astounding tales along this line and therefore feel it worth while to show the absurd impossibility of such a habit.

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[125] Scribner's, Nov., 1901, p. 549.

[126] Field & Stream, Oct., 1911, p. 611.

[127] The King Cat of the Rockies. Field & Stream, Oct., 1914, p. 610.

Plate XII.
Cougar Studies
by E. T. Seton

First, there is the theoretical objection that no species can live by cannibalism; even a small degree of this vice is enough to turn the balance against it and wipe the creature out.

Second. This same charge was persistently made at one time against the wild turkey and the Wolf. Now we know the males of these species to be devoted parents.

Third. The positive evidence in the section on monogamy shows it to be absurd.

So far as I can learn, no man ever actually *saw* anything that gave support to this idea. The whole notion has been invented to explain the mournful wailing and moaning of the species, said lamentations being assumed to be those of Rachel mourning for her children, beyond the possibility of comfort.

Pairs. All the American Cats, so far as known, are monogamous; why should the Cougar be an exception?

Whenever two adult Cougars are found together they are male and female.

In Jan., 1912, Walter C. Dallas and his friends, hunting on Crystal Creek near Jackson's Hole, killed a large male Cougar that was travelling and hunting with a beautiful female.[128]

On Jan. 18, 1900, Judge D. C. Beaman of Denver, while hunting on Grand River, Colorado, put up 3 Cougars, 2 of which they got; they were a pair. What the sex or age of the third was, is unknown. Late in 1903, Charles J. Lisle found a pair together.[129]

On Jan. 22, 1901, Colonel Roosevelt found a pair together at Meeker, Colo.[130]

Bachman definitely states[131] that the Cougars go in pairs.

If we had full details of the courting ceremonies of the Cougar, I doubt not they would be found a close parallel to those of domestic Cats. Every scrap of evidence I can find points to this conclusion. One of the most amusing fragments is contributed by the picturesque pen of E. T. Martin. If I err not in the interpretation, it was a fight between two males over a female who was calmly enjoying it from some comfortable perch near by.

"One moonlight night, coming 'long the trail from town, I heard a lot of yowling like a yard full of Cats holding a ward caucus. Lions or Bobcats, I didn't know which and didn't care much. I knew they wouldn't bother me if I let them alone, and seeing as how my gun was in town, and a

[128] Forest & Stream, Sept. 28, 1912, pp. 393–94.

[129] As above, Jan., 1915, p. 932.

[130] Scribner's, Nov., 1901, p. 552.

[131] Q. N. A., II, p. 312.

pocket knife was all I had, I wasn't going to stir them up very much. I kept right on to where the trail took a sharp bend, and when I turned, there on the fallen trunk of an old dead pine stood the yowlers—two of the biggest Cougars I ever saw. They were sharpening their claws and facing each other like a couple of House-cats on a back-yard fence; then first one would scream, and after he'd hollered a bit, the other would join in on the chorus. Pleasant, wasn't it? Home 2 miles ahead, town 8 miles behind, and I tired out. Old Buck, the Horse, didn't much relish the situation and for such a bag of skin and bones was surprisingly lively, dancing and side-stepping like a two-year-old.

"I looked on a little while and as neither of them sports showed signs of having a home to go to or getting paralysis in his vocal cords, it was up to me to do something; so I went back a piece and cut a heavy club, then with old Buck between them and me, I started to go past them. The old Horse kinder crowded me a bit, but wasn't as much scared as I would have been in his place, 'cause they must jump over him to get me. Kinder reckon he knowed what cowards they was, 'cause he'd been in the mountains enough to have more sense than some of them tenderfeet I take in. Well, we had to pass within 'bout 20 feet of them. When we got opposite, they turned and faced us, snarled, spit like a Cat when she sees a Dog, then they faced about, jumped off the log and loped away. I did think, seeing there was two, they'd stand their ground; one, I knew would run.

"Next day I got some of the neighbours together and with a couple of Dogs we chased them sports until almost dark, and never got near them, and lost their trail in a windfall where the Dogs nor me either couldn't go."[132]

Now comes Mills, the keen observer, and says: "It is probable that Lions mate for life. Sometimes they live year after year in the same den and prowl over the same local territory. This territory, I think, is rarely more than a few miles across; though where food is scarce or a good den not desirably located, they may cover a larger territory."[133]

Gestation

The period of gestation was definitely fixed by Dr. Wm. A. Conklin at 13 weeks or 91 days[134] and by observations in the London Zoo, at 97 days.[135] These are the extremes of variation.

Young have been recorded born, or due to be born, on the following

[132] Forest & Stream, Sept. 19, 1914, p. 364.

[133] Watched, p. 193.

[134] Mamm. Ad., p. 35.

[135] Proc. Zoöl. Soc., London, 1832, p. 62.

dates: Jan. 10, Feb. 10, March 15, and June (Roosevelt), Aug. and Sept. (by reckoning backward from Steve Elkins' account, *Field & Stream*, Dec., 1918, p. 616). In Washington Zoo, Jan. 31, April 4, April 16, April 21, April 30, Sept. 24.[136]

If we reckon 13 weeks back from these dates we have the mating seasons Oct. 11, Nov. 12, Dec. 15, March, May, June, Nov. 2, Jan. 4, Jan. 16, Jan. 21, Jan. 30, June 26, which shows that the breeding season may be at any time, and does not definitely settle anything. Fortunately, we have some direct evidence, as will be seen later.

Frank E. Brown writes that on Feb. 6, 1912, on the Clearwater, Ida., he shot a Cougar that had in her "4 perfectly formed young about the size of half-grown mice, proving, in this case, that mating must have taken place in January."[137]

Den

The den, lair, or ledge of the Cougar, granting freedom of choice, is always in a cave.

"The dens of this species are generally near the mouth of some cave in the rocks, where the animal's lair is just far enough inside to be out of the rain; and not in this respect like the dens of the Bear, which are sometimes ten or twelve yards from the opening of a large crack or fissure in the rocks. In the Southern States, where there are no caves or rocks, the lair of the Cougar is generally in a very dense thicket or in a canebrake. It is a rude sort of bed of sticks, weeds, leaves, and grasses or mosses, and where the canes arch over it; as they are evergreen, their long pointed leaves turn the rain at all seasons of the year."[138]

But the most complete description of all is by our old friend Grizzly Adams, whose accounts have stood the critical storms of many years. As his book is rare and little known, I give his story in full. The season was spring, and the place, Humboldt Mountains, Nev.

"Our watch, therefore, convinced us of the presence of many beasts; but it was impossible to see where they retired, and we knew not how to proceed to hunt them. As we were thinking this matter over, however, one of the Indians announced that he had discovered a Panther's den, where there were young ones, and described it as being about a mile farther down the cañon, in a spot very difficult of access. Upon questioning him, I perceived that he understood the signs and proofs of the brute nearly as well as myself; and we resolved to proceed at once to the place.

[136] W. H. Blackburne, personal letter.

[137] In the Open, Aug., 1912, p. 20.

[138] Q. N. A., II, p. 311.

"The road was one of the utmost difficulty, on account of the thick brush, precipices, ledges, and rocks which were piled together in great confusion the whole way. In some places we had to let ourselves down, at the risk of breaking our necks, from one shelf of rock to another; and the place itself, as we found upon reaching it, was of most gloomy description but exactly calculated for the dens of ferocious beasts. It seemed a perfect Golgotha of the animal creation; for the bones of Deer, Antelopes, Wolves, Coyotes, and birds, together with feathers and hair, lay scattered about in every direction. Some of the bones were yellow with freshness, others perfectly bleached, and many crumbling with age. The place, indeed, bore the appearance of having been the den of beasts since the days of Methuselah. After viewing the premises attentively, we came to the conclusion that a particular horizontal opening in a ledge of rocks led to an immense den; and we determined to await the pleasure of the inmates to come forth. We accordingly posted ourselves, Gray and an Indian at one place, and I and an Indian at another, within 50 yards of the den, and in such positions as to have fair aim and be able to assist each other if necessary."[139]

The great piles of bones are evidence of the Panther's continued loyalty to his home den. Shoemaker says: "Panthers insisted on returning to spots where they had reared their young the season before."[140] And again: "Clem Herlacher learned of these Panthers and discovered their 'ledge' in the early summer of 1892. He abstracted 4 pups which were about 3 or 4 months old. Returning the following year he found 2 pups in the same nest, which also he carried away."[141]

H. W. Shoemaker writes me that in the summer of 1897, he saw one of these cubs, which was on exhibition in Herlacher's Barber Shop, Loganton, Clinton County, Pa. "The hide was faded, but the spots were clearly discernible."

Jay C. Bruce, the California Lion-hunter, gives the following interesting details.

"After trailing about three hours, during which time the Lioness had made several unsuccessful attempts to kill a Deer, the trail finally led to the carcass of a doe which was partly devoured as it had been killed several days earlier. From here the Lioness went up the mountain, circling round a bluff of rocks. On the upper side, atop of the bluff, the trail apparently ended, for the Lioness had jumped down over a ledge and worked down the bluff to her lair. After circling for about 10 minutes without locating the trail the

[139] Adv. J. C. Adams, pp. 246–7.

[140] Penn. Lion., p. 24.

[141] As above, p. 34.

Dogs winded the lair and soon located it. The mother Lion was in the lair with the 3 kittens.

"After some difficulty I succeeded in shooting the mother Lion in her lair and then captured the 3 kittens which were about 10 days old, I should judge.

"The lair was about 6 feet long and 2 feet wide. The nest was bedded with pine needles, probably carried in the den by Wood-rats for their nests at some time. There was also a small opening, perhaps 8 inches in diameter, through which the sun would shine on the kittens in the nest."[142]

Young

With many animals which pair, it is usual for the female to prepare the nest in the den, and in some way notify the male to live elsewhere as soon as she feels her time drawing near. Probably this is the case with the Cougar, for just before the birth of the young, and for some days after at least, she is always found alone in the den.

The young are born, according to various records already noted, at any time, but usually in midwinter or early spring. They number 1 to 4 and in rare cases 5 at a birth. Grizzly Adams found 5 kittens in one den.[143] The usual number is 2. Dr. W. A. Conklin of Central Park Zoo gives the 7 successive broods of one Texan Panther there at 4, 4, 2, 4, 3, 2, 1. Their eyes are closed at birth as with other Cats, and continue so for 8 or 9 days.

They cut their first teeth in 18 or 20 days. The young often die during teething, according to old Pennsylvania hunters.

When they arrive they are covered with fine yellow-brown hair elaborately spotted with black, as shown in the photographs. (Pl. XVI.) These spots are usually lost when the cub is 6 months old; but John Fannin records some exceptions. He says:[144] Two young which he received about a year ago could not be over 2 months old, and yet had *no spots;* "and again I handled one about a year and a half old which showed the spots quite plainly."

The mother is wholly devoted to her young, as with most of the Cats. She guards and fondles them unceasingly, carrying them about in her mouth, if it is necessary to move them.

William H. Blackburne, the experienced head-keeper of the National Zoo, has given me the following valuable information on the early family life of the Cougar in captivity, referring chiefly to an affectionate female that he had tamed. She was quartered by herself that winter with a small den

[142] Cal. F. & G., July, 1918, pp. 152–3.

[143] Adv. J. C. Adams, p. 258.

[144] Forest & Stream, Mar. 6, 1897, p. 184.

box on the inside of the cage. Here she bore cubs about the latter part of November.

"Every time I would approach the cage," he says, "she would leave the cubs, come to the bars to be petted, then go into the den, come right out, and back and forth. I thought she wanted me to see her little ones, which were then 6 days old, so I ventured in and she seemed pleased. I sat down and took the cubs into my lap to see their sex—3 males, 1 female. During that time, she purred and rubbed against my face and shoulders, and was not the least bit alarmed at my handling of the cubs. They were then blind; their eyes partly opened on the 9th day, merely cracked, but were fully opened on the afternoon of the 10th day.

"When the cubs were 7 weeks old, they were able to crawl out of the box and waddle about the cage. At 9 weeks old, they began to pay attention to the meat, or one might rather say, annoy their mother while she was eating it; for she always carried her ration into the den box and ate it there.

"A few days later, she called them when she got her meat and laid it down, licked the meat, and then licked the cubs. She tumbled them over with her tongue as they would crawl to her head, and she would continue to lick the meat and then the cubs. Finally, she finished the meal, then gave the cubs a cleaning; she lay down and the cubs went to nursing.

"On the 3d day afterward, that is when they were about 10 weeks old, she called the cubs, laid the meat down, purred and uttered a few very faint meows that could not be heard 15 feet away. Then when the cubs became interested in the meat, she walked off and lay down in the far corner. The cubs began to pull and suck at the edges of the chunk, but did not tear off any meat that I could see. But they learned what it was and what it was good for.

"At 3 months old, they were separated from the mother at feeding time, given a small portion of ground meat, and also a large bone without any meat on it—a bone they could lay hold of, and tug at to help cut their teeth. As they became stronger and their teeth longer, ground-up pigeon with entrails, feathers, and legbones removed, was given three times weekly. You seldom see Cougar cubs raised in captivity, and when you do chance to see them, they are rarely perfect—they have crooked backs or legs. I blame poor feeding for much of this. So few keepers seem to know that soft bone, either from pigeons or with ground meat, is what builds up the cubs of any feline; it prevents rickets and goitre.

"At 4 months old, the cubs were fully weaned. They were ready to fight each other over their food. They did not seem contented to sit and

eat their share, but would grab a mouthful, then start jumping about the cage, growling and spitting at each other.

"I think, without doubt, young Cougars have the least sense of any of the large Cats and are the hardest to raise. They use such poor judgment in jumping or romping about the cage. They start off without gauging distances or obstacles, or knowing how or where they are going to land."[145]

At 3 to 4 months usually, the wild ones are weaned, but they continue under the mother's care. She will go hunting for miles, kill a Deer, then go back and lead the young ones to it. It is generally believed that when a Panther's kill is buried or carefully concealed, it means it was the work of a mother who will soon be back with her cubs.

They continue with the mother until they have learned to hunt for themselves, and this may mean 6 months, may mean well over a year, or even in some cases till they are 2 years old. In which case the mother breeds only every other year.

Harold C. Bryant is responsible for the statement that "Young of two sizes have often been seen with the mother."[146]

The Father's Part

And where was the father all this time? Philandering with other mates, or wasting his energies pursuing the family that he may wreak his unnatural diabolic hate on them, destroy and devour them, for displacing him in the mother's affections, as one or two writers would have us believe?

From a multitude of witnesses I select one or two, and give condensations of their stories, prefacing them with the only dissonant note that I can find on good authority—no less than Col. Theodore Roosevelt, who says: "The mother lives entirely *alone with the kittens while they are small.* As the males fight so fiercely among themselves, it may be that the old he-Cougars kill the young of their own sex. A ranchman whom I knew once found the body of a young male Cougar which had evidently been killed by an old one, but I cannot say whether or not this was *an exceptional case.*"[147]

I have italicized the words which make the paragraph an answer to itself.

O. O. Smith of Fredonia, N. Y., a well-known observer, went fishing on the Pilchuck River in the Cascades of Washington in June some years ago, when he had the luck to find wandering in the woods a Cougar cub, "not over a foot in length." He caught it, and wrapping it up in his coat, made

[145] Letter, Sept. 24, 1923.

[146] Cal. F. & G., Oct., 1917, p. 161.

[147] Scribner's, Nov., 1901, pp. 548–49.

off, but soon found himself pursued by *two* full-grown Cougars who came to rescue their young one. He killed the mother, but the other adult carried off the young one safely and with evident affection.

The story is set forth with very full detail in *Forest & Stream*, Nov. 14, 1908, pp. 770–71.

James Fullerton, the veteran hunter of Wyoming, tells of a man who saw two Cougar cubs in the woods of Idaho in 1884. He tried to catch them. "Their calls were heard and answered not by one, but by two Lions—a male and female," who attacked the man in defense of the cubs, presumably their own. The incident is given fully in the section on "Cougar Attacks."[148]

R. H. Billings tells of killing a pair of Cougars, "evidently mates," in the Kootenay Lake country at the beginning of winter, then "had not gone more than a hundred yards when I saw four more smaller ones; two of them were playing like a couple of kittens."[149]

"A Puma was killed on the Rio Bravo, between Fort Duncan and Laredo. It was full grown and of considerable size, measuring from the nose to the insertion of the tail nearly 4 feet. This one was the head of a family, consisting of himself, a mother and 2 young ones. During his struggle with the hunters and Dogs he raised a terrible cry, twice or thrice, to express his rage, and perhaps also to give to his family the notice of danger. The latter seemed to have retreated immediately after hearing the warning, as the hunters, after despatching the old one, could trace the fresh tracks of both the mother and the 2 young going down on the river side."[150]

As fully noted in the Life of the Blacktail Deer, C. Greenwood of Chehalis, Wash., describes the hunting of a Deer by 4 Cougars—2 little ones and 2 big ones. If this was not a family group, and an ideal one, it was a miscount or an optical illusion.[151]

But the most complete account and delightful picture is offered by Old Grizzly Adams, who lay hidden with a companion to watch for the owners of the den already described. I never heard any one question Adams's reliability, so I give his account in full; believing it a sufficient answer to those who charge the Cougar with all manner of unnatural vices and credit it with no virtues at all.

"It was about sundown when we took our positions, and we had not waited long before I had the pleasure of seeing two Panthers come out of the cleft of rocks. They played with each other, wrestled and caressed, and I

[148] Sports Afield, Sept., 1913, p. 215.

[149] Field & Stream, April, 1918, p. 1012 and p. 1014.

[150] A. Schott: Mamm. Mex. Bd., p. 6.

[151] Recreation, June, 1899, p. 470.

PLATE XIII.—COLORADO COUGARS
By E. T. Seton, 1886, 1889

soon saw that one was a male and the other a female. Never in my life before had I seen two large beasts play so prettily, and I therefore watched them without disturbing their gambols. In a few minutes afterward, 3 small kittens came out of the cleft and commenced playing, also springing upon their parents' backs and off again, and growling with pleasure. I could have watched a long time, but the opportunity being too favourable to be neglected, I drew my rifle, and, giving a whistle as the signal agreed upon with Gray, fired at the female and pierced her through the heart. Gray also fired, but unfortunately at the same animal, so that the male remained unscathed. He could not see us, however, and, being confounded by the unaccustomed sound, did not fly, but pranced about, jumping over the dead body of his consort, looking in every direction and screeching every few minutes. I reloaded as quickly as possible and fired a second shot, but without the fatal effect of the former one. The beast was, however, struck; and making a tremendous spring he bounded in the direction of Gray. I thought he was springing for my comrade; and in an instant, drawing my knife and uttering the loudest yell that ever passed my lips, I rushed forward; but the Panther was only scared, for, passing by them, he bounded over a cliff into the bushes out of sight, and this was the last we ever saw of him.

"After waiting until his screeches had died away in the distance, we approached the den for the purpose of securing the little ones; but they evaded all our efforts. We used our buckskin coats to throw over them, but they dodged and jumped with such rapidity that our endeavours were useless; when we thought we had them surely, they were not there; and finally they ran into the den and buried themselves in its recesses."[152]

The Mother's Love

The mother Panther's love, like the mother Cat's love, is proverbial. It is, indeed, the climax and measure of heroic devotion. This is the opinion of the hunters who know the creature best, and the Panther might well have inspired the lines by Sir Walter Scott:

> Like Mountain Cat that guards her young
> Full at Fitz-James's throat he sprung.

The case related by Roosevelt when the mother fled before the Dogs, leaving her 3 kittens to be destroyed by the pack, is strange and exceptional. It was, of course, a mere assumption that they were her own young ones.

[152] Adv. of J. C. Adams, pp. 247–49.

Again he says: "A she-Cougar does not often attempt to avenge the loss of her young, but sometimes she does. A remarkable instance of the kind happened to my friend, Prof. John Bache McMaster, in 1875. He was camped near the head of Green River, Wyo. One afternoon he found a couple of Cougar kittens and took them into camp; they were clumsy, playful, friendly little creatures. The next afternoon he remained in camp with the cook. Happening to look up he suddenly spied the mother Cougar running noiselessly down on them, her eyes glaring and tail twitching. Snatching up his rifle, he killed her when she was barely 20 yards distant."[153]

Bachman says: "The female Cougar is a most affectionate mother and will not leave her young cubs, unless occasionally to procure food to support her own strength; she therefore often becomes very lean and poor. The female we have figured was in this condition; we procured one of her cubs and figured it, presenting its beautiful spots, seldom before noticed. The other made its escape.

"The whelps are suckled by the dam until about half grown, and then hunt with the old ones (which generally go in pairs) until the mother is with young again, or the young ones find mates for themselves and begin to breed."[154]

Thus we have abundant evidence of the mother's effective care for her young, attested by many witnesses.

Probably the noblest height of mother love and devotion is seen in the episode recorded by Ed. G. W. Ferguson.[155]

"A fight between a Grizzly-bear and female Mountain Lion was witnessed by two miners who were working a placer claim near Murray, Ida. The female, with her kittens, had her lair near the top of an almost precipitous barren hill. The men knew she was there because they had frequently heard her and once or twice caught fleeting glimpses of her as she moved among the rocks. One afternoon one of them noticed a large Bear travelling along the top of the ridge on his way to the valley below. His course was such that he would pass directly in front of the Lion's lair. They stopped their work and watched.

"The Bear peacefully ambled along evidently unconscious of the Lion's presence when, as he approached the pile of rock where her kittens were hidden, the Lion suddenly appeared. She might just as well have remained hidden, and if she had, the Bear would without doubt have gone on his way in peace. But she didn't, the watchers saw a dark body shoot out

[153] Wilderness Hunter, p. 346.

[154] Q. N. A., II, p. 312.

[155] Field & Stream, Oct., 1914, p. 612.

and with one long leap land square on the Bear's back. The surprised brute reared and tried to throw her off; he frantically clawed the air and tried to reach her; then he rolled on the ground; the Lion let go and with another spring was at his throat. The animals were too far away for the watchers to closely observe the details of the fight, but it must have been interesting while it lasted.

"As it was, they thrashed about, and finally, locked in each other's embrace, they rolled over the edge and tumbled down the hillside, over and over into the gulch below.

"The miners found them in the creek bed, both dead, with almost every bone broken. The Lion was hanging by her teeth to the Bear's cheek, his throat and back were torn and lacerated, and his belly hide ripped into ribbons, mute evidence of the fact that all her 4 paws with their 18 sharp claws had not been idle.

"The kittens were later captured, but only one lived and he was sold to a menagerie."

Age

What age does a Cougar attain? Zane Grey tells of a specimen known as "Old Tom" that had been king of the Grand Canyon for 12 years.[156]

In the Central Park Zoo, New York, according to Dr. W. A. Conklin, there was a female Texan Panther that lived there 16 years, producing 7 litters in that time, or 20 cubs in all.[157]

There is an account of a Mountain Lion killed by Ray Pass of Huntsville, Utah, after a career of destruction not less than 10 years long and some said of 20 years in those mountains.[158]

Cougars in the Washington Zoo, adult when they came, have lived to be 7 years and 2 months old, 7 years and $2\frac{1}{2}$ months, $11\frac{1}{2}$ years, $8\frac{1}{4}$ years, 6 years and 5 months.

Dr. P. Chalmers Mitchell kept one in the London Zoo till it had reached the age of 10 years and 4 months.[159]

Henry W. Shoemaker, after much study of the matter, is of the opinion that the wild Panther may have a normal life of 20 years, and writes me that J. Ernest of Youngdale, Pa., knew one that came through Daguscahonda, Elk County, "every spring for nearly 20 years, remaining a few days, then moving on. The natives missed it when it stopped coming about 1890."

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[156] Everybody's Mag., June, 1908, p. 776.

[157] Mamm. Ad., p. 35.

[158] Forest & Stream, July 29, 1911, p. 176.

[159] A. B. Baker, personal information.

The last chapter in the life of an aged Cougar was told me thus by John B. Goff of Meeker, Colo.

In the February of 1900, he and a Mr. Basil from West Virginia had followed the trail of an unusually large Cougar for 36 hours. The track was of the largest size which meant, of course, a large animal, but they found several places where it had stalked a Deer and failed to get it on the final spring. All of which told a story of failing powers—of advanced age.

At length the Dogs overtook and treed him; he was the largest, thinnest Cougar that Goff ever saw. He could not have weighed over 110 or 115 pounds.

When Goff came near the tree the cranky disposition of the very old Cougar showed up strong. Ignoring the Dogs it gave every evidence of gathering its legs under it to spring at the man, threatening him with looks and snarls, and waiting only till he came within reach; it seemed crazy with rage.

But Goff took no chances. He dropped the beast with a single shot of his rifle.

The gaunt old fellow was not only hungry and starving, but his stomach contained a mass of squirming whitish worms, in total bulk as big as two fists.

This was the only time Goff ever felt that he was in danger of actual attack from a Cougar, and he maintains his belief that as soon as within reach, that desperate old fellow would have sprung on the hunter, and at least have had the satisfaction of a fighting finish to a long sporting life.

Powers

Most anatomists take the common Cat as the model of bony and muscular perfection. "Active as a Cat" is an established measure of physical fitness. There is not on earth a creature of the size that is better equipped in point of agility, muscular control, weapons, and—shall I add?—personal prowess, sheer fortitude. These ideas, I believe, need no proof; they are among the recorded things that have been proven a thousand times. Let us then remember that our Cougar is in all physical respects a Cat, simply a Cat multiplied by 20. A literal application of this measure shows that it is justified in all matters dealing with muscular strength; while as to agility, since the Cat represents perfection, the Cougar can do no better.

There is, however, a certain modification that must be made of the general statement that sets the Cougar in the forefront of all athletes in our woods. There can be little doubt that the Deer, especially the Whitetailed Deer, is the speediest of all the native woodland creatures that run on four

legs. If it were not so, the Cougar and the Wolves would have wiped them out these many æons back.

Even deep soft snow does not leave them entirely at the mercy of their foes. But when deep snow is rendered deadly by a sharp thin crust, it is another story and an evil day for the Deer.

"Under certain conditions of the deep snows," says Merriam, "the Deer cut in so deeply that the poor animals can make but slow progress. At such times, a Panther, by spreading the toes of his great broad paws, simulates a man on snowshoes and sinks but a short distance in the snow. He thus gains a vital advantage over his prey and will now give chase to and capture one that he missed on his first spring. Under no other circumstances will a Panther pursue a Deer, for he is too well aware of the uselessness of an attempt to overtake so fleet an animal."[160]

Speed. Roosevelt says: "It was astonishing to see the speed of the Cougar. He ran considerably more than a quarter of a mile downhill, and at the end of it, had left the Dogs more than 100 yards behind."[161]

Charles J. Lisle's description of the Cougar's speed is the best thing of the kind I know. He tells thus of the chase: "Bursting over the little knoll directly ahead of us they came; a long, lithe beast, like a silvery brown shadow, that travelled in unbelievably long leaps, was the first to come to view. I do not think it saw us; but it had run a long ways—far longer than a Cougar will usually travel ahead of a pack of hounds—and it was due to take to a tree.

. . . . . .

"As we came within perhaps 100 yards, the smaller [Cougar] sprang from the tree into the midst of the pack. They saw it coming and tried to reach it as it lit. But it sprang farther than the circle of Dogs, and then took off into the forest at an amazing rate of speed, the Dogs hot on the trail, but left far behind. Some of its leaps were 30 feet, as we measured them; one, downhill, was fully 40 feet from the take-off to where it ended. I do not believe there is any other creature on earth that has such speed as a Cougar for a short distance."[162]

Spring. The fateful spring of the Cougar at the climax of his hunt is, of course, his best effort. Of this Merriam says: "The distance that a Panther can pass over in a single leap is almost incredible. On level ground a single spring of 20 feet is by no means uncommon, and on one occasion Mr. Sheppard measured a leap, over snow, of nearly 40 feet. In this instance

[160] Mamm. Ad., p. 32.

[161] Scribner's, Nov., 1901, p. 562.

[162] Field & Stream, Jan. 9, 1915, p. 933.

there were 3 preliminary springs, and the Panther struck his Deer on the fourth. The longest leap measured by Mr. Sheppard was one 60 feet, but here the Panther jumped from a ledge of rocks about 20 feet above the level upon which the Deer was standing. He struck it with such force as to knock it nearly a rod farther off."[163]

In the Trees. Although the Cougar is perfectly at home in a tree when he chooses to climb, he rarely does so, except when driven up by a pack of Dogs. While quite young the cubs are known to scramble about among the branches in play, and there are one or two records of Cougars taking a nap as they crouched on some big limb not too high up; but these are rare, and the species must be considered a ground or rocky hillside loving animal.

Swimming. The Cougar shows little fear of water. Indeed, he crosses it, lake or river, fast or slow, summer or winter, whenever it suits his purpose to get to the other side. O. O. Smith describes the plunge of the mother Cougar into the icy Pilchuck to come to the rescue of her cub;[164] and J. C. Hughes of New Westminster, B. C., says he knew of 2 Panthers killed while crossing the Fraser River where it was nearly a mile wide.[165]

H. G. Hayes, telling of his hunt after a wounded Cougar, one of whose eyes was shot out, says: "The Lion headed straight for the river, a swift mountain stream about 35 yards across, and too deep and swift for man or Horse to ford. But it swam directly across."[166] Dr. N. Hollister tells me that in Louisiana the Cougars took to the water whenever it was in their line of travel, quite as readily, indeed, as Deer.

Endurance. Merriam tells of Panther chases in the Adirondacks that lasted many days or sometimes weeks.

H. G. Hayes hunted one with Dogs for 6 days before he got it, although it was wounded and blind of an eye. It lived on the country as it travelled.[167]

Shoemaker speaks of a hunter who followed the Panther for nearly 2 months before he brought it to bay.[168]

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[163] Mamm. Ad., pp. 31–32.

[164] Forest & Stream, Nov. 14, 1908, p. 770.

[165] As above, Sept. 6, 1883, p. 103.

[166] As above, July, 1917, p. 306.

[167] As above.

[168] Penn. Lion, p. 39.

When the King-cat Goes A-hunting

Of all the beasts that roam America's woods, the Cougar is the big-game hunter without a peer. Built with the maximum power, speed, and endurance that can be jammed into his 150 pounds of lithe and splendid beasthood, his daily routine is a march of stirring athletic events that not another creature—in America, at least—can hope to equal.

The map of his range fits very exactly into that of the Whitetailed Deer and its kin; in colour he matches the Deer closely, doubtless to mislead the Deer if it chance to see him, and this is unquestionably his ideal and favourite prey.

There are a few—very few—records of a Cougar lying in hiding by a water-hole or on a runway, waiting cat-like for some heedless, hapless Deer to amble within the fatal circle of his amazing spring.

James Fullerton tells of two instances that he observed when the Cougar lurked in a high ambush and both times got a Deer.[169] (See also section on "Patience," p. 102.) But there can be little question that the finest kind of hunting, the still hunt, the match of wits with wits and, for a finish, power with power, is the Cougar's method—the one by which nine tenths, at least, of his prey is taken.

Leaving the high ledge where he has sprawled in the sunlight, he sets forth at nightfall to cruise in great sweeping circuits through the woods of his own vast range, exactly as a man would do, only he moves far faster, goes farther, and covers the ground in the silence that in many parts of the West has won for him the name of Sneak-cat.

But this great difference there is between the two still-hunters: The man watches chiefly the ground and the distance, the Cougar studies the wind. The scent of a fresh track is ever helpful, but the real body-scent on the wind is the proof he chiefly seeks. That tells him better than eyes or ears that close at hand is the choicest of all game. Now begins the slow, stealthy approach, directly up wind, not so they cannot smell him but so he can smell them—which serves the same end—he has the wind. Their keen nostrils sound no alarm to the unconscious Deer.

Gliding like a shadow he goes, under or along logs and fallen trees, around dry, leafy places or brittle twig heaps that might snap and rustle, making

[169] Sports Afield, Sept., 1913, pp. 215–16.

long pauses to study out some outline in the gloom, going back or around some place of poor approach. Waiting for half an hour, if need be, till the faint murmuring or grinding sound of feeding Deer is renewed, he nearer crawls, makes sure of their being there, takes in the setting and estimates the advantage of this or that take-off; backs slowly away, it may be, to approach at another angle, that will lead him to a leap 10 feet above the Deer. Again consumes a small eternity to get there; then, flatter than a sawmill slab, he lies on the rock, gazing intently in the gloom, focussing all his power of glare to single out a Deer, to cut it clean from its background.

If there be two to pick from, the one without horns is his choice, or the nearer, or one that stands or lies clear away from any threatening snags. Hastily he computes that he can make it in one, two, or three fast bounds. If more than one, his first must reach that rock, his next that log, and then the Deer and the hunter's joy.

He gathers his legs below him for the spring, up-bows his back, tries the footing for each paw till it is firm and smooth, then hurls himself with one vast silent bound, strikes the flat rock with scarcely a sound, and flashes through the night.

But the Deer, alert, have heard him. They spring to their feet, are up and away. But he is under full headway, they are hardly up as he lands on the hindmost spikebuck, strikes him to the ground with his own projectile weight, and drives 8 talons deep in his flanks and 4 long white fangs in the rounded neck, jerks back with mighty paw the long slim nose till the neck bone cracks, the buck sinks down, and the Panther purrs as he laps the gurgling blood. In a moment it is over, not three seconds' suffering had the buck. And the Panther drinks his red wassail and riots in the hot feasting, ripping open the belly to devour first the liver. then the hindquarters and, however hungry he be, avoiding the head.

It may be he missed in that first stalk and dash. Yes, he often misses. The Deer are keen, alert, trained by the Panther himself to avoid him.

Some think that in not one out of three attempts does the hunter make his kill. Then he has the joy of another hunt and another brave attempt; that too may fail, and so the night may pass in failures. It often happens that in such a case he can go back to where he buried the remnant of a former hunt, or he can look for a lesser prey, or, last, he can suffer the pangs of hunger till another night arrive with better luck.

Many a Deer escapes even after struck, for snags and saplings happen in between. The Panther's foot may slip, the Deer may get a better start than he. A score of things may spoil the final scene. Proof of this is seen

in the many Deer that are found with scratches of the Panther's claws in their flanks or rear.

It is generally conceded that the female is the better hunter of the two, partly because she hunts harder and more persistently, and partly because she is.

If she and her spouse happen to be hunting together, of course, they feast together at the moment of triumph. But more often she is out hunting for her family, and as soon as the victim is certainly dead, she drags it off into some secluded spot and carefully covers it up with earth, brush, and grass. Then she hies her away to the den where she left her brood; calls them, just as a Cat calls her kits, and leads them with marvellous directness to the very spot of the kill, and looks on with joy and watchfulness as they fill their little bellies and growl little growls at each other, till the bones of the victim are cleaned, or the Cougarlets are stuffed so they cannot eat another bite.

If still there is food on the table and Mother has fed, she covers it up again—a store for a rainy day. Although burying the kill is supposed to be the female's peculiar trick, Dan J. Singer reports a male Cougar doing this in Sonora.[170] It is also proof that the killer means to return soon for another meal and is at that moment not more than a mile at farthest from the spot. This interesting fact is commonly turned to account by the wise sportsman. In the present case, the result was that Dan Singer took the pelt back East with him when he went.

One meal a day seems to be the rule of the Cougar family, and next dinner-time commonly sees the still-hunter back at his kill, for he usually makes meal after meal till the whole of it is devoured, unlike some other sportsmen whose names need not be mentioned.

Storing Food

All observers agree that the Cougar habitually buries for future use the portion of his kill that he could not eat at the first grand banquet.

Azara gives us details of a more complete storage habit. He kept a young male for 4 years as a household pet, according to Hudson. This animal, "would not refuse any food offered to it; but when not hungry it would bury the meat in the sand, and when inclined to eat dig it up and, taking it to the water-trough, wash it clean."[171]

An extraordinary illustration of the storage habit is seen in the following adventure related by Alwin Frache of Waneta, B. C. During a hunting trip in the mountains, he took an afternoon nap. In his own words:

[170] Field & Stream, March, 1912, p. 1098.

[171] Nat. La Plata, p. 40.

"It could not have been more than an hour before I awoke, but my first impression was that night had fallen, for I was in absolute darkness. My movements caused a great rustling and not until I rose to a sitting posture did my head emerge from the heap of leaves with which I had been covered. After finding my gun and pipe I sat down to think the business over. I finally concluded I had been cached for future use by some animal, and I determined to see the adventure through.

"I piled sticks and brush into a heap about the size of a man and covered them with the leaves. Then I shinned a tree close by and, sitting astride a branch, made sure there was nothing wrong with the action of my Savage.

"It was just as well that I awoke when I did, for I had been but a short time in the tree when a large female Cougar appeared, followed by 2 half-grown kittens. Going straight to the pile of leaves, she circled it several times, crouching and apparently selecting a good place to spring from. When she made the leap she went through the air like a flash, scattering the leaves in a whirlwind and scratching and snarling. When she had cleared the ground without finding what she wanted, she did not stop to display disappointment. Instead she cast about, struck my scent and came direct to my tree." When, of course, the matter was settled with a rifle ball.[172]

An older record of the kind is furnished by Dr. W. J. McKnight. He gives an interesting history of "Bill Long" the Jefferson County, Penn., hunter, about 1803,[173] in which he narrates the following:

"When Long was still a young man, one day he went up the North Fork to hunt. About sundown he shot a Deer, and when he had it dressed there came up a heavy rain. Being forced to stay all night, he took the pelt and covered himself with it, and lay down under the bank to sleep. After midnight he awoke, and found himself covered with sticks and leaves. He knew at once this was the work of a Panther hunting food for her cubs, and that she would soon return. He therefore prepared a pitch-pine fagot, lit it, and hid the burning fagot under the bank and awaited the coming of the Panther. In a short time after this preparation was completed, the animal returned with her cubs, and when she was within about thirty feet of him, Long thrust his torch up and out, and when it blazed up brightly the Panther gave a yell and ran away."

Lest any should consider these experiences incredible and impossible, I refer them further to *Forest & Stream*, April, 1921, p. 165, in which Henry Bannon, the sportsman, ascribes an exactly parallel adventure to one Henry

[172] Recreation, Sept., 1902, p. xxix.

[173] Forest & Stream, Jan. 3, 1914, p. 5.

Utt, a hunter employed by the surveyors of the Virginia Military District in Ohio some hundred years ago. And Col. Henry W. Shoemaker writes me that the Pennsylvania hunters, Seth Nelson, James David, James DeLong, and others, had precisely similar experiences. They fell "asleep in the woods and were covered with leaves by Cougars."

The Trail of the Freebooter

From many hunting incidents that shed light or colour on this freebooter's life, I select the following from my scrapbooks and journals: On the night of Sept. 14, 1899, I was camped with my wife on the High Sierra in California near Barker's Creek, not far from Mount Tallac. It does not rain there at that season, so we had no tent, but each night rolled up in our blankets and slept on the ground about half a yard apart. During that night there was a great alarm among the Horses. They broke loose and stampeded. Next morning we learned the cause. A Cougar had come into camp, had prowled around us as we slept, so said the tracks, but had gone off without attempting to harm any of us.

That is as near as I ever got to a wild Cougar. And although I have seen their tracks and their work many times in the Sierra, the Colorado Rockies, the Yellowstone, and the Bitterroots of Idaho, I never had the luck to see the living animal, though I doubt not many a one has watched me.

In mid-September, 1902, while camped in the Bitterroots of Idaho, I found in the dust the tracks of a band of Mule Blacktail moving all one way. I followed for a time and found the track of a large Cougar joining on. After a quarter of a mile, I came on the fresh-killed body of a female Deer and in the woods near by were her two fawns running about. But they were big enough to take care of themselves and made off.

Later on, one of our party saw the Cougar but it calmly glided away keeping the trunk of a tree between itself and the rifleman.

On Jan. 27, 1914, I went on a Cougar hunt with Henry Anderson of Yellowstone Park. Our pack consisted of 2 trailing hounds and 2 Airedales—that is, 2 parts find and 2 parts fight. We rode over the slope of Mount Evarts past a dozen Bighorns, scores of Deer, hundreds of Antelope and thousands of Elk, but only one Cougar trail did we see: that was the big one we were after. At length we came on a large buck Blacktail just killed and partly devoured, but a driving snowstorm set in and ended all possibility of seeing, tracking, hearing, or shooting; so unwillingly we turned back to the Fort.

Early in the day we started a Coyote which showed the Dogs what "speeding-up" really meant and left them hopelessly behind though in

plain view for a mile or more. This led to the information that that Coyote was probably one of several that made a practice of following the Cougar around, so as to get what was left of his kill after he was gorged and elsewhere sleeping. Oftentimes, however, the Cougar is said to take his rest on some high perch where the scent does not betray him to creatures on the ground, and from such a place spring on the Coyote that heedlessly ventures too near.

The poisoners commonly use the Cougars' kill for a bait, and consider it a sure thing for Coyotes. Occasionally also they secure a Cougar in this unsportsmanlike way.

While camped in the Flattops of Colorado, Sept. 9, 1901, my guide, Charles Erickson, told me that a hunter he knew was stalking a band of Mule-deer in those hills. It was in the snow and he was dressed in white. When he had got barely within range the band scattered and ran furiously. One separated from the others and on its back was a Lion. After a short run it dropped dead and the hunter came up and shot the Lion as it was revelling in the spouting blood of its victim, probably with eyes shut.

The Whitetail Deer and its kin are so easily within the Cougar's power that one is not surprised to find them essaying much larger prey.

Hugh Johnson, the old-timer, says:[174]

"On North Platte River I was watching a band of Elk a little way off, waiting for them to get into a place where I could creep up and kill a heifer, for I needed meat. While I was watching, a Panther jumped out of the brush on to a cow and grabbed her by the neck with his teeth. She ran this way and that, butting into trees and brush and it seemed to me she was trying to scrape the Panther off. She kept moving so quickly, though, and the other Elk starting off made things so confused, that I could not see exactly what happened. In a minute everything was out of sight and I stepped along down to try to see what had happened, and I had not gone far when I saw the Elk lying on the ground and the Panther working at her throat. Of course, I killed him and got my meat."

In the Yellowstone Park the Cougar is the only beast of prey really dangerous to a full-grown Elk. In my Yellowstone Journal for 1914 I find this note: Henry Anderson, the guide in Yellowstone Park, followed the track of a Cougar last winter (1913) for 10 miles near Yancey's and found that he had killed and cached 3 cow Elk. In each case he had dragged the body as much as 150 yards to a good cover, and there had hidden it with brush and snow. These caches serve as food supply if famine comes, but also they commonly fall to the share of the Coyotes.

[174] Forest & Stream, Oct., 1907, p. 532.

In Dec., 1917, Steve Elkins went Lion-hunting near Yellowstone Park. In Hellroaring Canyon he found the remains of an Elk killed by Lions.

"Dec. 19th we found a fresh track and followed it a short distance and saw where the Lion had jumped on an Elk and they both went over a steep bank. When they hit the bottom the Elk went one way and the Lion another. I think the Elk must have fallen on the Lion and hurt him in some way, for this is the only time I ever saw an Elk or Deer get away from a Lion after having been caught. The Lion crossed the river, jumping from rock to rock, and one of my Dogs tried to follow the Lion and fell in and was washed under the ice and drowned."[175]

Abe Leeds, my guide in the Bitterroots of Idaho, 1902, tells me that in the early part of the winter, when the bulls have horns, the Lions prefer to attack only the does and fawns. He says that he once followed the track of a bull Elk that was followed by a Mountain Lion and came at length to the Elk bedded in the snow. He was a fine big fellow with huge antlers, and on a log 30 yards away he saw where the Lion had stood watching the unconscious Elk and calculating his chances; but evidently, impressed by the antlers, he had decided that he dared not attack such a formidable looking creature and had unwillingly sneaked off to find an easier prey.

From Elk it is but a step to Buffalo. The following paragraph from John D. Hunter's "Captivity among the Indians," 1823, p. 111, gives not only a stirring incident of wild life, but an amusing illustration of a simple hunter's story made ridiculous by a pompous editor who translated it into Johnsonian English, which is another name for mongrel Latin.

"The Buffaloes passed so near me on both sides, that I could have touched several of them merely by extending my arm. In the rear of the herd was one, on which a huge Panther had fixed, and was voraciously engaged in cutting off the muscles of its neck. I did not discover this circumstance till it had nearly passed beyond rifle-shot distance, when I discharged my piece and wounded the Panther. It instantly left its hold on the Buffalo, and bounded with great rapidity toward me. On witnessing the result of my shot, the apprehensions I suffered can scarcely be imagined."

The ravages that the Cougar makes among Horse herds are notorious. It is said that in the mountains no Horse can long escape the Cougars. So that it was with something like a little thrill of pleasure that I listened to an account of the wild Horses of the desert in the northwest part of Colorado on the Utah line, sometimes called the Yampah Plateau. This is a famous haven-land for wild life, or was when I camped near by in 1901. It abounded in mustangs among other noble rarities, and there they lived and throve in

[175] Field & Stream, Dec., 1918, p. 615.

spite of wild beasts and wilder men. They seemed to have an answer for all the big problems. According to my Journal of the time they cannot be lassoed because they take to the abundant brakes and cedar woods where roping is impossible. They cannot be run down, because it costs ten times more than they are worth and ruins your saddle stock as well as the victim. They do not fear the Wolves, for they keep in compact herds. They do not fear the snow, for they winter on the high ridges where the snow blows off, and the forage is good. And they do not fear the Cougars because the ever-watchful mares keep the keenest lookout. Sign or smell of a Cougar is enough to make them round up into a tight bunch with the colts in the middle, and not the boldest Cougar dare attack them. Only when some headstrong foolish broncho wanders off alone do the Cougars feast on Horse meat. Just as when a few winters ago a band of 8 head of Horses left the wind-swept ridges and wandered to a lake whose shore in summer furnished delectable forage. But alas, they were young, they knew nothing of deep snow, and floundering in the drifts, all died.

The Patience That Wins

The consummate, enduring patience of the questing Cougar is illustrated in these notes from Enos A. Mills's "Watched by Wild Animals," pp. 195–96:

"A friend wished a small blue Mule on me. It had been the man's vacation pack animal. The Mule loitered round, feeding on the abundant grass near my cabin. The first snow came. Twenty-four hours later the Mule was passing a boulder near my cabin when a Lion leaped upon him and throttled him. Tracks and scattered hair showed that the struggle had been intense though brief.

"Not a track led to the boulder upon which the Lion had lain in wait, and as the snow had fallen 24 or more hours before the tragedy, he must have been there at least 24 hours, and he may have waited twice as long.

"Another time I frightened a Lion from a cliff where he was waiting for a near-by flock of Bighorn Sheep to come within leaping distance. Though it was nearly 48 hours since snow had ceased falling, not a track led to the Lion's watching place or blind."

Heroism of the Cougar

Is the Cougar as brave as he is strong?

Like every creature treated in this book, he is described as cowardly by those who, without any personal risk, pursue and destroy him.

I do not think we should accuse the Cougar of cowardice because he

shuns the attack of many Dogs, backed by men armed with guns. He knows it is a ten-to-one fight—he has no chance. A better answer is found in this: the Cougar will face and fight to a finish any number of Dogs and is more than ready to try conclusion at any time with Wolf, Jaguar, Blackbear, or Grizzly. The fact that he continually avoids a clash with man is a remarkable circumstance discussed more fully later on.

In the section dealing with the mother Cougar's courage and devotion to her young, is related her battle with a Grizzly-bear. But such fortitude is not confined to the mother at the time of her maternal obsession.

From a considerable number of similar stories I select two to illustrate the Cougar as a mighty hunter of the biggest and most dangerous game we have. The first is by Hugh Johnson and appeared in *Forest & Stream*, Oct. 5, 1907, p. 533.

"I have heard people say that sometimes Panthers and Bears have big fights, and I have seen one or two Grizzlies killed that had fearful naked ridges on their backs that looked like long deep scars. I always believed that the Bears got these by fighting with other Bears, but of course, I never saw such a fight, and I never saw a fight between a Lion and a Bear.

"I was told something a good many years ago by a man who had been a great deal in the South, that interested me very much, and which, I think, is worth telling about. This man was Major Cremony. He had been a good deal in the Southwest, especially among the Apaches, and they said he could talk good Apache. He told me that once he and a couple of Apaches were out hunting down on the Pecos and came on the tracks of a big Lion and took the trail to look for it. They were following up this trail toward a rocky canyon where they thought a Lion might be found, when suddenly they heard a fearful noise coming from this canyon. As near as I could understand, it sounded a good deal like a Pig squealing or groaning. Major Cremony did not know what it was, and I judge the Indians did not either, but they crept up toward it, and what do you suppose they saw? There was a big Lion and a middle-sized brown Bear, and they seemed to be having a fight; not a regular rough-and-tumble, but the Lion seemed to be trying to kill the Bear. The Bear was standing on his hind-legs with his back against a big rock and was yelling bloody murder. The Lion was crouched on the ground about twelve or fifteen feet from the Bear. They waited there quite a while, the Lion in the position of a Cat about to spring, working his tail, with his ears laid back and getting ready for a jump as he moved his feet back and forward, as you will see a tomcat do. Once in a while he would growl. The Major and the Indians kept quiet and looked on. At last the Lion charged the Bear and grabbed him, and they both went

down together and the dust flew up so that it almost hid the two fighters. In a little while the Lion suddenly let go and sprang back to where he had been before. Both animals were bleeding and each was licking its wounds. The Bear kept up his moaning and screaming and would have been mighty glad to get away, but he did not dare to expose his back to the Lion. The two animals spent some time licking their wounds, but at last the Lion charged the Bear again, and this time with his claws he tore open the Bear's back, and his claws must have reached some deadly part, for presently the Bear fell over dead and the Lion went off to his old place and began to lick his wounds again. After a while he took hold of the Bear's carcass and began to drag it down the hill and to cover it up with leaves and brush, just as I expect you have often seen a Deer's carcass covered up by a Lion. While the Lion was at work doing this, one of the Indians killed him.

"This Major Cremony was a good man, and I believe he saw what he said he did, and from what he told about the way the Lion fought the Bear and the way he cut up its back, it may be that the scarred Bears that I have seen had got their scars in fighting Lions."

I have often been told of the Eastern Cougar attacking the Blackbear successfully, especially when the attacks were made by a pair. It is difficult to see how the Bear would have any show against such an attack, but this is the only case that I know of in which a single Cougar went out of his way to attack a Bear and apparently made a success of it.

The second is by W. H. Hudson, who says: "Azara states that it is generally believed in La Plata and Paraguay that the Puma attacks and conquers the Jaguar; but he did not credit what he heard, which was not strange, since he had already set the Puma down as a cowardly animal, because it does not attempt to harm man or child. Nevertheless, it is well known that where the two species inhabit the same district they are at enmity, the Puma being the persistent persecutor of the Jaguar, following and harassing it as a tyrant-bird harasses an eagle or hawk, moving about it with such rapidity as to confuse it, and, when an opportunity occurs, springing upon its back and inflicting terrible wounds with teeth and claws. Jaguars with scarred backs are frequently killed, and others, not long escaped from their tormentors, have been found so greatly lacerated that they were easily overcome by the hunters."[176]

The Two He Does Not Care to Meet

In the Cougar range there are two interesting wild things usually left unmolested. These are the Skunk and the Porcupine.

[176] Nat. La Plata, p. 35.

PLATE XIV.—COUGAR STUDIES IN CENTRAL PARK ZOO, N. Y.
By E. T. Seton, 1885–1889

Youthful indiscretion is probably the explanation of the following breach of the rules:

"On Nov. 3, 1916, our Shepherd Dog treed a young California Lion a short distance below our ranch, near Coulterville, Mariposa County, California. My father, on approaching the Lion, which had taken refuge in a live-oak tree, noted an odour of Skunk. After the Lion had been killed the stomach was found to contain a half-chewed Skunk, a striped one, judging from the black and white hair found. The Lion was only a small one, weighing in the neighbourhood of 35 pounds."[177]

The Porcupine has ever been a dreadful problem for the big flesh-eaters.

"Cougars are either particularly fond of Porcupines, or else are frequently forced by hunger to make a distasteful meal, for certain it is that large numbers of these spiny beasts are destroyed by them. Indeed, it often happens that a Panther is killed whose mouth and lips, and sometimes other parts also, fairly bristle with the quills of this formidable rodent. Porcupines are such logy, sluggish creatures, that in their noctivagations they fall an easy prey to any animal that cares to meddle with them."[178]

They may be easily killed, but so far as known there are only two animals that can kill them with impunity: man and the Fisher.

Doctor DeKay says that he was told of a Cougar "in Warren County [New York] that resorted to a barn, from whence he was repeatedly dislodged and finally killed. He showed no fight whatever; his mouth was found to be filled with the spines of the Canada Porcupine, which was probably the cause of his diminished wariness and ferocity, and would in all probability have finally caused his death."[179]

The Cougar's Destructiveness

"Kill only what you can use" is a good sportsman's motto. Mostly, the Cougar lives up to it. But there are exceptions to this rule of high sporting ethics. One is when game is so plentiful that the Cougar, like some of our own species when by luck they have a repeating rifle and abundance of opportunity, cannot resist the temptation to kill a whole lot for the fun of seeing them tumbled under his prowess. The other is that of the female who has a vigorous and growing family, so does not take any chances, but goes a-hunting the very next day, having thus more than one meat cache on which to draw.

According to most hunters, a Cougar will commonly kill 2 Deer a week

[177] Donald D. McLean: Cal. F. & G., Jan., 1917, p. 39.

[178] Mamm. Ad., p. 30.

[179] Nat. Hist., N. Y., 1842, II, p. 49.

the year around, where game is plentiful. But I have known one kill that many a day among the winter bands of Deer in Yellowstone Park.

Steve Elkins says that a Cougar will average 2 Elk a week, and a female that he followed had killed 2 in one day.[180]

"It is a well-established fact," says H. C. Bryant, "that the Mountain Lion or Cougar is the most important enemy of Deer. Those who have studied the problem believe that a single Mountain Lion kills an average of 1 Deer a week throughout the year, thus making a total of at least 50 victims annually. A Lion often kills more than it is able to eat. There are records of one Lion having killed 3 Deer in a single night, and large Deer appear to fall prey about as often as small ones. W. T. Shock followed a male Lion for 3 days in Trinity County and found that it had killed 3 bucks during that time."[181]

It does not, however, limit its diet to venison.

Bachman's account of the Cougar's food reflects conditions chiefly in the South, where it preys on small animals, young Deer, Skunks, Raccoons, Wild Turkeys, Pigs, Calves, Colts, Steers that are mired; to this V. Bailey adds Gray-foxes and Mules;[182] and Enos Mills says that "The Lion eats almost anything. I have seen him catching Mice and grasshoppers. On one occasion I was lying behind a clump of willows upon a Beaver dam. Across the pond was an open grassy space. Out into this presently walked a Mountain Lion. For at least half an hour he amused or satisfied himself by chasing, capturing, and eating grasshoppers. He then lay down for a few minutes in the sunshine."[183]

In the northern Rockies there can be no doubt that the Cougar is the principal enemy of the Bighorn Sheep and Mountain Goats.

So much for the wild things on which it preys, and where man has replaced them with his own herds, the King of the Hills does not hesitate to accept the substitute.

In California, Dr. Saxton T. Pope says that he has known one old Cougar to kill 300 Angora Goats in a year, besides Deer.[184]

The scientific nickname of the Rocky Mountain Cougar is "Horse-thief," and from the Missouri to Monterey, from Vancouver to Val Verde, there is one long string of wails, enunciations, and lamentations over the Cougar as the remorseless, unremitting destroyer of Horses.

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[180] Field & Stream, Dec., 1918, p. 616.

[181] Cal. F. & G., Oct., 1917, p. 160.

[182] Texas, p. 162.

[183] Watched, p. 194.

[184] Field & Stream, Dec., 1919, p. 763.

In the Shasta country it was practically impossible to raise colts at all on account of the Cougars.[185] The same was true for a long time of the country near the Grand Canyon, Ariz.

He will pass by any other prey to get at his favourite food, the hot, fresh meat of a yearling colt, and loses no chance to show that his name of *hippolestes* or "horse-thief" is only too well bestowed.

"One Mountain Lion killed by a bureau hunter near Roosevelt, Ariz., had a record of destroying 50 calves and 3 colts on one ranch besides many killings on other ranches."[186]

Thus he challenges man to a final showdown, and at the same time lines up his friends among mankind; raising the question as to whether the wild King-cats of this fair land or the man-imported Cats and Dogs are more harmful.

"Dr. A. K. Fisher estimates that the Cats of New York State destroy 3,500,000 birds annually."[187] Also "the U. S. Government places the value of insect and weed-seed eating birds to the farmer at $1 each per year."[188] New York State conditions are repeated at least 20 times in the United States. This would imply an annual loss by Cats of $70,000,000 through destruction of bird life alone.

Dr. Frank M. Chapman is of the opinion that in 1902 there were 25,000,000 Cats in the United States, and maybe twice as many.[189] There are certainly twice as many to-day, and at the lowest reckoning, each Cat kills $1 worth of birds, besides other game each year.

Dogs are even more destructive, because they kill larger game and farm stock. Pennsylvania, with its population of 6,000,000, had, in 1921, 355,291 licensed Dogs. The unlicensed easily raise the number to 400,000, or 1 Dog to 15 inhabitants.[190] Greenwich, Conn., with its population of 22,300, has 1,300 licensed Dogs, and undoubtedly enough unlicensed to raise the number to 2,200, that is, 1 Dog to every 10 inhabitants. New Mexico, with its population of 500,000, had an officially estimated Dog population of 80,000, or about 1 to every 6 inhabitants. This high rate of Dog population is characteristic of the less densely settled regions, and it seems safe, with the figures in view, to estimate the Dog population of the United States at 10,000,000.

In the State of Missouri, with its human population of 3,000,000 and its

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[185] C. H. Townsend: Calif., 1887, p. 189.

[186] Ann. Rep. Biol Surv., 1920, p. 4.

[187] The Conservationist, July, 1919, forematter.

[188] As above.

[189] Bird Lore, 1902, p. 70.

[190] Penn. Crop & Livestock Report, No. 70, April 1, 1922, p. 4.

estimated Dog population of 200,000, the Dog damage to stock alone in 1891 was $200,000,[191] added to which is the vast and unknown damage by destruction of game and harmless or beneficial wild animals.

Let us remember that the Sheep industry of the Eastern States has been virtually destroyed, not by Wolves or Panthers, but by Dogs.

The Deer of Connecticut, restored by carefully applied laws of conservation, have been reduced to almost nothing again, not by Wolves or Panthers, but by unrestrained poachers and Dogs.

So also throughout the West, the Dogs which vastly outnumber the Wolves, Coyotes, and Panthers, are the cause of enormous damage which is unfairly credited to the wild creatures. Thus, E. L. Pineau, of the U. S. Biological Survey in New Mexico, writes me: "Many Dogs supposed to be faithful family pets and watchdogs, prowl about at night unnoticed by their owners, and depredate on domestic animals and fowl. When the damage or loss is discovered, it is usually attributed to wild animals or other causes."

Unquestionably the annual damage done by Dogs in the United States is at least $200,000,000.

Contrasted with this, what is the entire Cougar damage in the United States? The Government hunters (Biological Survey) estimate the annual damage of a Cougar at $1,000.[192] There may be 5,000 Cougars in the United States to-day, certainly not more, making a total damage of $5,000,000.

According to mortality statistics furnished by the U. S. Bureau of the Census, the deaths from rabies (practically all conveyed by Dogs) ranged from 88 in 1911 to 54 in 1921, an average of 60 per annum. The decrease is due to the successful activity of the Pasteur Institute. The reports cover only 82.2 per cent. of the population by area, so that we must add about one quarter to the figures. That is, in the United States, Dogs are responsible for some 75 deaths each year among mankind through rabies alone. Deaths through physical assault or conveyance of tapeworm and other diseases are not tabulated, but are known to be numerous.

In North America, during 400 years, we have reliably recorded 6 cases of Cougars attacking mankind. In only 4 of them was human life lost. Undoubtedly, Dogs are guilty of as many unprovoked attacks on man every day, and destroy more human beings in a year than the Cougar during its whole written history.

These facts should be kept in mind when we attempt to solve the question of game preservation. Predatory wild animals are not the chief cause of the destruction.

[191] Sheep Industry in U. S., U. S. Dept. Agri., 1892, pp. 867–68.

[192] W. B. Bell, Yearbook, U. S. Dept. Agri., 1920, p. 29.

The Chase of the Cougar

On my desk before me now is a huge mass of printed matter gathered in thirty-odd years, dealing with Cougar hunts.

Most of these tell us how the hunter, "absolutely alone and without assistance of any kind, excepting that given by a pack of Cougar hounds and a very small army of experienced mountaineers, and armed with practically nothing but two or three high-power repeating rifles, had actually done to death a gigantic, ferocious, roaring, yelling Cougar that, according to the most conservative guesses, weighed when alive over 300 pounds and was estimated to be over 11 feet long."

Stories of this class are a regular output of the current magazines to-day. Before passing on, let me say that any one, man, woman, or child, who has a couple of thousand dollars to spare can do this very feat; that is, kill a Cougar, without the slightest risk, discomfort—or glory.

Because they are pleasant variants, and extremely rare, I shall give four hunting stories that I know or believe to be true.

The first, a hound hunt with a lasso finish.

The second, a hound hunt with a knife finish.

The third, a hound hunt with a bow-and-arrow finish.

The fourth, a single-hand fight by a lone hunter armed with a revolver.

The Lasso Finish

Buffalo Jones was a pioneer in the art of catching Cougars with the lasso. His adventures "Cougar-catching on the Siwash" have been recorded by Zane Grey, from whose thrilling account I quote.

The creature had been treed but decided to make another dash and fight for freedom.

"The Cougar grew more and more restless, spitting, growling, and swinging her tufted tail faster and faster. Jones got under her this time—close enough to make Frank and me call out warnings—and was re-coiling his lasso when the beast ran out on another branch and jumped. This time she fell short, clutched a dead piece that broke, letting her down hard into a bushy branch, from which she hung head downward. For a moment she swung free, then reached toward the tree, caught it with front paws and then back paws, ran down like a Squirrel, and leaped off when thirty feet from the ground. The action was as rapid as it was astonishing.

"Like a yellow rubber ball she bounded up, and fled with the yelping hounds at her heels. The chase was short. Moze nipped her again and again, and before she had gone a hundred yards she sought safety in another pine. Frank, who had mounted, in anticipation of just what happened, almost rode the Dogs down in his eagerness.

"This time the Cougar was well out upon a low, spreading branch. Jones conceived the idea of raising the loop of his lasso on a long pole, but the cunning beast pawed the rope aside. Then she leaped out over the Dogs and ran like a Deer down the ravine.

"For several hundred yards she outran the hounds, then they began to close upon her. Don, who was swiftest, nipped her tail and checked her. A blow on the side of the head sent him reeling. Sounder closed in, tried to hold the Cougar, but she eluded him, and dashing up the side of the ravine, leaped upon the first tree. It was a half-dead pine with short snags low down, and a big branch extending out over the ravine.

"'I think we can hold her in this tree,' said Jones, and he began the ascent of the trunk. As he went up, the Cougar started to move upon the snags, crawled up one after another, and seemed to be trying to get upon a big branch. It was plainly evident she was afraid of falling, but she succeeded, presently, in getting upon the large limb.

"Jones worked up to a position about even with her and then cast his lasso. It caught on a snag. Again and again he re-coiled and recast, only to fail.

"'Rope those dead twigs an' break them off,' yelled Frank.

"It was a good suggestion, which Jones at once carried out. At his next throw the lasso fell upon the Cougar. Angrily she shook it off. Again he sent the noose flying. She pulled it away from her back and bit it savagely. Jones jerked back so hard he nearly lost his balance. The noose caught on her front paw and slipped.

"'That's what I want,' called Jones; 'if I can get her front paw, she's ours. My idea is to pull her off the limb, let her hang there, and then lasso her hind legs.'

"He made at least twenty attempts, every one of which was futile. Finally a successful cast settled the noose perfectly round her neck. She chewed on the rope with her front teeth, and appeared to have difficulty in holding it. Cautiously Jones took up the slack, and slowly the rope tightened; the noose narrowed until a quick jerk fastened it close round her neck. We made the forest ring with our yells of triumph.

"That triumph was short-lived. Jones had hardly moved when the Cougar shot straight out into the air. The lasso caught on the branch,

hauling her up short, and there she hung in mid-air writhing, struggling, giving utterance to sounds terribly human. For several seconds she swung, slowly descending, while Jones bawled unintelligible commands to us. Then came a crash, and Jones fell out of the tree. The lasso was wrenched from his hands, and the Cougar dropped into the bunch of waiting, howling Dogs.

"For a moment it was impossible to distinguish what took place. A great flutter of leaves whirled round a swiftly changing mass of brown and black and yellow, from which came a fiendish clamour.

"I saw Jones plunge down the hill and try to grasp the whipping lasso. I lost my footing, stumbled, and fell prone on my face into the ravine, and rolled over and over until I brought up with a bump against a stone.

"What a tableau riveted my gaze. It rattled me so I never thought of my camera. The Cougar sat on her haunches with body well drawn back by the taut lasso to which Jones held wildly and grimly. Don was standing with her, upheld by her hooked claws in his head. The Cougar had her paws outstretched; her mouth was wide, showing great white fangs; she was trying to pull the head of the dog to her. The other hounds were tussling round her body. Suddenly both ears of the dog pulled out, slit into ribbons. Don had never uttered a sound, and once free, he made at her again with open jaws. One blow sent him stunned and bleeding. Then began again that terrible wrestling whirl.

"Frank and I seized clubs and ran in upon the confused furry mass. We fought all over the bottom of the ravine, crashing through the bushes, over logs and stones. At last we pulled Sounder and Moze to where Don lay half stunned and I held them while Frank turned to help Jones.

"The panting Cougar crouched low on the ground with eyes of purple fire.

"'For God's sake get a half-hitch on that sapling!' called the cowboy.

"His quick grasp of the situation averted a tragedy. As the Cougar sprang, Jones threw his lasso round the sapling. The Cougar missed him, although her left front paw stretched alarmingly near his face. She came to the ground with a heavy thud. A flash of Jones's big hands fastened the lasso, and Kitty was a prisoner. While she fought, rolled, twisted, bounded, writhed with hissing fury, Jones sat mopping his face. Her efforts were futile; she began to weaken from choking.

"Another lasso stretched her out helpless between two saplings; and then the old buffalo-hunter calmly took her paws in his powerful grip and clipped off her dangerous claws. Forcing her mouth open with a stick and pressing her head back on the ground, he strapped a collar round her neck and snapped a chain to that. Then, unaided, he muzzled her with a wire

round her jaws, held in place by a little bar of iron thrust back of her big canines—and Kitty was a subject of pity.

"That night she crouched close beside a pine-tree not fifty feet from our camp-fire and worked ceaselessly for that thing which, to man and beast alike, makes life worth living—freedom."[193]

The Knife Finish

The next is a condensed account of one of Roosevelt's hunts in Colorado, 1901, by himself. The hounds had driven a female Cougar to bay in her den, had killed her cubs, and driven her out the back way.

"Away she went completely through the low cave or hole, leaped out of the other end, which was some 30 or 40 yards off, scaled the bank, and galloped into the woods, the pack getting after her at once. She did not run more than a couple of hundred yards, and as we tore up on our Horses we saw her standing in the lower branches of a pinyon only 6 or 8 feet from the ground. She was not snarling or grinning, and looked at us as quietly as if nothing had happened. As we leaped out of the saddles she jumped down from the tree and ran off through the packs. They were after her at once, however, and a few yards farther on she started up another tree. Either Tony or Baldy grabbed her by the tip of the tail, she lost her footing for a moment, and the whole pack seized her. She was a powerful female of about the average size, being half as heavy again as the one we first got, and made a tremendous fight; and savage enough she looked, her ears tight back against her head, her yellow eyes flashing, and her great teeth showing as she grinned. For a moment the Dogs had her down, but biting and striking she freed her head and forequarters from the fighters, and faced us as we ran up, the hounds still having her from behind. This was another chance for the knife, and I cheered on the fighters. Again they seized her by the head, but though absolutely staunch Dogs, their teeth, as I have said, had begun to suffer, and they were no longer always able to make their holds good. Just as I was about to strike her she knocked Turk loose with a blow, bit Baldy, and then, her head being free, turned upon me. Fortunately, Tony caught her free paw on that side, while I jammed the gun-butt into her jaws with my left hand, and struck home with the right, the knife going straight to the heart. The deep fang marks she left in the stock, biting the corner of the shoulder clean off, gave an idea of the power of her jaws. If it had been the very big male Cougar which I afterward killed, the stock would doubtless have been bitten completely in two.

"The Dogs were pretty well damaged, and all retired and lay down

[193] Everybody's Mag., June, 1908, pp. 784–85.

under the trees, where they licked their wounds and went to sleep; growling savagely at one another when they waked, but greeting us with demonstrative affection, and trotting eagerly out to share our lunch as soon as we began to eat it. Unaided, they would ultimately have killed the Cougar, but the chance of one or two of them being killed or crippled was too great for us to allow this to be done; and in the mix-up of the struggle it was not possible to end it with the rifle. The writhing, yelling tangle offered too shifting a mark; one would have been as apt to hit a Dog as the Cougar. Goff told me that the pack had often killed Cougars unassisted; but in the performance of such feats the best Dogs were frequently killed, and this was not a risk to be taken lightly."[194]

The Bow-and-Arrow Finish

To Dr. Saxton T. Pope of California, with his partner Arthur Young, belongs the glory of reviving and demonstrating the heroic old sport of killing big game with bow and arrows.

They had killed all kinds of game from Ground-squirrels to Deer and Bear, and were anxious to try their weapons on Cougar. So they set out in September for a Cougar hunt, with the help of a small pack of three Dogs, in the wilds of Tuolumne County, Calif.

"Up at an elevation of 5 or 6 thousand feet, some 20 or 30 miles above Sonora, on Rose Creek, we came across the tracks of a good-sized Lion.

. . . . . .

"On the first day his tracks were so cold that the Dogs were not able to follow them, but they showed us the general route of our friend *Felis*. Next morning bright and early we arrived on the mountain crest in time to strike a fresh scent. The Dogs worked around in circles for a few minutes unwinding the trail. We later learned that our Lion had been fussing with a Porcupine at this spot. When old Eli struck the outgoing trail, you saw nothing but a streak of yellow disappearing over the ridge. Eli is that rare combination of shepherd and Airedale that makes the best Lion Dog. Although he is a silent trailer, he has a record of 52 Lions to his credit. Ranger, the hound, is slow but sure, and when he gets on a hot track the neighbours know it. Dick is a crazy Airedale that will fight anything after a good Dog finds it.

"Eli, Ranger, and Dick all beat it, in a straight line, and so did we. This is no place for a Horse. It is a question of legs. If the automobile has not absolutely ruined your powers of locomotion, you may stand a show, but you've got to prove it.

[194] Scribner's, Nov., 1901, p. 548.

"I want you to know that we are running up the side of a mountain, over the crest, through manzanita brush, thickets of young cedar, buckthorn, over ledges of lava, down steep declivities, through mountain misery among giant oaks, cedars, and pines.

"We are stripped for action. Young and I both carry powerful yew bows, 5 feet 8 inches long, pulling 75 pounds. At our sides swing deerskin quivers, holding a dozen or more steel-tipped arrows, sharp as daggers. Besides hunting knives we have no other weapon. We run and gulp and thump till every muscle is about to strike, when we arrive at a large oak on the mountain side, and there are the Dogs dancing beneath it.

"Up on a limb of the tree sits one of the most beautiful animals I ever saw. His colour is exactly that of a Deer, blue-buff. There he sits very quietly swinging a great undulating tail. We take a big breath and are ready for business. Old Felis is all hunched up, covering his vital areas very cleverly. We are about 20 yards from him, and stand in the only spot that permits direct fire. There is an opening about 4 inches across his chest where we may shoot.

"I count three, and at the word Young and I let fly our arrows in unison. They fly wild; mine buries itself deeply in his shoulder; Young's strikes below his eye and enters his throat. The Lion rears and battles with this arrow. As he sways in the tree, thrashing from side to side, we shoot again, and miss him clean. You can go up there in Tuolumne County and find one of my perfectly good arrows sunk deep in the heart of an oak.

"Just then he freed himself from the offending shaft, and as he did so he poised to leap. In that movement he exposed the white line of his chest. We steadied our arms, drew to the head and loosed two whizzing shafts. They struck him full and fair over the heart, not 3 inches apart. So clean and hard they struck that on they flew; feathers and all slipped through his chest. Man! man! that was a dandy shot!

"At that instant out he leaped and soared over our heads like a Flying-squirrel. With one mighty bound, he swept an arc of 75 feet, downhill, and landed running. But he did not run far. He fell, he staggered to his feet, the Dogs were on him, he struggled, fought wildly, gurgled, and died."[195]

The Single-handed Finish

From the many hundreds, maybe thousands of hunting stories, I select the following because of its two crowning virtues: It is different from all the others, and it came near being a fair match of man's power and wits against

[195] Field & Stream, Dec., 1919, p. 763.

beast power and wits, for the hunter did not have the help even of a yellow pup.

The story is told by P. H. Moore, a young man who in the early winter of 1899 was hunting alone in Brown's Park, northeastern Utah. He had killed a Deer and made a midday camp.

"While toasting my feet and munching my lunch," he says, "my eye wandered aimlessly along the top edge of one side of the canyon, and espied a Cougar loping along against the skyline. I could not tell whether it had seen me or not. What wind there was, was drawing straight down the canyon, and I felt sure that he had not got my scent. The Cougar, in the meantime, scrambled down over the edge of the cliffs and disappeared in a crevice in the rocks.

. . . . . .

"My actions after seeing that Cougar were not governed by reasoning or common sense. I just naturally followed some primal instinct and went after that Cat. Leaving my coat, lunch, and venison beside the embers of the fire, guarded only by a couple of empty shells, following the tradition that the smell of burnt powder will keep away Coyotes, I started up the side of those cliffs, with the Cougar's lair as my objective. Coming to the mouth of the crevice which, a mere seam in the rocks ten feet above my head, opened to nearly twice the width of a man's body at the base, I stopped and fired a shot from my forty-five into the gloom. I jumped back and waited, but nothing happened. I tried it again with the same result.

"Being impatient to start something, I laid my rifle on the ground, loaded the empty chambers of my six-gun, and with it in one hand and my hunting knife in the other, crawled into that black, spooky-looking hole after that Cat.

"I wouldn't do it to-day for a million dollars. I crawled along some 10 or 12 feet, the hole getting narrower and my head-room less as I dragged myself forward. When the bulk of my body had shut off the light behind me, I stopped and listened. Somewhere ahead in the darkness I heard the Cat growling. I hunched forward a few more feet and then got sight of its two blazing eyes. No hunter needs to be told what a wild animal's eyes look like in a dark place. If my hair had been 3 feet long it would have stood straight on end. I unlimbered the old forty-five, and the report deafened and must have scared the Cat. It let out a nerve-racking snarl, there was a scrambling and rolling of stones, a puff of dust, and then absolute stillness. I could hear my heart beating. In fact, it made a noise like a riveting hammer on a piece of boiler plate. I waited with my six-shooter cocked for something to happen. Finally after quite a struggle I lit a match.

There was no Cougar in sight. I found that my head and shoulders were sticking out into an irregularly shaped rocky chamber, perhaps 15 feet long and 6 or 7 feet wide and high enough to stand up in. I crawled in and lighting various matches began to explore. The crevice in the rock making this little cavern narrowed down at the far end, turned to the left, and went almost straight up like a chimney. Peering up this hole with my light extinguished, I could see a faint gleam of daylight. As it seemed to be big enough for the purpose, I proceeded to climb. I found it difficult to worm my way up this hole with a cocked six-shooter in my right hand. When I had negotiated some 7 or 8 feet of this chimney it widened, took a little more horizontal angle, and came to the light of day under the edge of a big sandstone boulder some 30 feet above where I had entered. I stuck my head out and looked around, winded and scratched, but keenly alive to eventualities. Then I crawled out, stood up, and looked for tracks. There was a little wind drift of powdered snow along the edge of the mesa that I was now standing upon, and I soon found what I was looking for. The Cougar's tracks were there, but there was no blood. He had evidently loped down along the edge of the cliff in the direction from which he had first come when I saw him while I was at lunch. As there was no foliage and the edge of the mesa was practically without cover, and the Cougar was not in sight, I concluded he must have gone down over the edge of the cliff to hide in among the rocks in its rough face. Keeping well back from the edge I followed his tracks, now and then discernible between the bare spots, for perhaps 200 yards, and then lost them. I crawled on my stomach to the edge of the cliff and looked over. There was no game in sight. Crawling carefully back I followed the edge of the mesa perhaps another 100 yards, and this time was rewarded by a sight of the Lion lying at full length on a little ledge of rock some 25 or 30 yards below me, and perhaps 50 yards to the left. Cautiously taking the back track I estimated the right spot to again peer over the cliff and get a shot. As I had nothing but my forty-five to kill him with, I did not wish to take any chances of losing out. The next time I peered over the cliff the Cat was not over 40 yards from my position.

"Even while carefully aiming my six-shooter at the back of his head I could not but note the sly curiosity with which he was watching the entrance to the cave where both he and I had first gone in. Although I could not see it, it must have been in plain sight from where he was lying flattened out on the ledge like a Squirrel on the limb of a tree. I even noted the tip of his tawny tail as it snakily waved slowly back and forth.

"I fired.

"With the click of the hammer the Cougar sprang out into the air,

struck some jagged boulders 40 or 50 feet below, tumbled and rolled a few yards farther down, and then lay still and crumpled among the sandstone boulders.

"When I scrambled down to him he was stone dead, the bullet having struck the back of his head between his ears and penetrated his brain.

"Outside of feeling weak in the knees and shaking like a leaf, I was not very much excited.

"It took me all the afternoon to get that Cat skinned and the hide tied up for carrying. It was dark by the time I got my rifle and had the skin back to the camp fire. It was half-past ten at night before I got back to the bunk house with my load."[196]

[196] Field & Stream, Sept., 1919, pp. 473–74.

Does the Cougar Ever Attack Mankind?

When first the Cougar became known to white men, they reasoned, as Shoemaker says, "that an animal which howled so hideously at night must be a destroyer of human life."[197]

Equipped with this idea, with the love of the terrible, and with a few though rare cases of Cougar ferocity, the early historian pictured a very demon of the woods, an insatiable man-eater, that lured brave men to destruction by simulating the cry of a woman or child in distress, then sprang on the would-be rescuer as a Cat does on a Mouse, and bore him away to be devoured at the top of some tall tree.

The epoch of these lurid and over-abundant demon tales was followed by one of utter skepticism, from about 1850 to 1900, during which men said that no Cougar ever was known to attack man, woman, or child.

For example: "The Panther is one of the most cowardly of beasts, never attacking man unless wounded and cornered."[198]

"I have never known a single instance where a Panther has attacked a human being."[199]

"We do not recollect a single well-authenticated instance where any hunter's life fell a sacrifice in a Cougar hunt."[200]

"There are many people who think the Panther a dangerous animal, but I never saw anything to make me think it was."[201]

In twenty-odd years of experience J. C. Hughes of New Westminster, B. C., knew of but one Cougar attacking a man and that apparently was by mistake, for the beast ran off when the man shouted.[202]

Cougar Attacks

A number of cases have been recorded where Cougars attacked man through mistake, and others when the creature really attacked a Horse before it noticed in the gloom that a man was riding it.

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[197] Penn. Lion, p. 13.

[198] Mamm. Ad., p. 36.

[199] Fannin, Forest & Stream, March 6, 1897, p. 184.

[200] Q. N. A., II, p. 311.

[201] Hugh Johnson, Forest & Stream, Oct. 5, 1907, p. 532.

[202] Forest & Stream, Sept. 6, 1883, p. 103.

Hugh Johnson gives a case in point: "This man that I speak about that was jumped on by a Panther was travelling along a trail between Cook City, in Montana, and the Yellowstone, and a Panther jumped on him from a rock above, caught him by the shoulder and threw him down. The man yelled and the Panther let him go and ran off. I have always believed that the Panther just took him for a Deer, and when he found out that it was a man, was just as badly scared as the man was, and made tracks."[203]

These last quotations represent the epoch of utter skepticism, but now we have enough evidence to show that on rare occasions the Cougar does attack mankind.

Roosevelt gives, and evidently believes, several detailed accounts of Pumas attacking man in Patagonia and adds: "As far as I know they are the first trustworthy accounts of a Cougar's having attacked man under normal circumstances."[204]

James Fullerton, who lived among the Cougars for over 40 years, gives the following. In the first case at least the Cougars were amply justified in their attack.

"Out in northern Idaho, in 1884, a section hand, wandering in the woods one Sunday, saw two Lion cubs asleep behind a log. They were about 3 months old and husky youngsters. The man was unarmed save for a sheath knife and never gave a thought to the fact that the cubs had a mother, but sneaked up and fell on them. They put up a lively scrap and a great call for help, as he started back to the house with them. Their calls were heard and answered, not by one but by two Lions, a male and a female. Whether the male takes a fatherly interest in his family and assists with their education or just happened to be there on a courting visit, I have never been able to learn, but he took a hand in the fight. The man killed both with his knife, but was almost disembowelled, his chest and back were torn, his left arm chewed and broken, and his face fearfully lacerated. A doctor came from Spokane, sewed him up, and his first question on recovering consciousness was, 'Where are my cubs?' He learned they were safe in a cage and his Lion skins stretched, awaiting his recovery.

"I heard of a woman in western Colorado having a baby taken from a cradle but if I remember aright she either shot or scared the Cougar so that the child was recovered little the worse. These are the only two authentic cases I have met with in 40 years."[205]

One of the oldest records in the country, that seems to be true, and that

[203] Forest & Stream, Oct. 5, 1907, p. 532.

[204] Through the Brazilian Wilderness, 1914, pp. 28, 29, 30, 31.

[205] Sports Afield, Sept., 1913, p. 215.

PLATE XV—PEN SKETCHES OF COUGARS

By E. T. Seton

has passed the censor so far, is given by McMurtrie in Cuvier's "Animal Kingdom," I, 1831, p. 115, as follows: "That this animal, our common Panther, does not always confine closely to Sheep, etc., is well known, and has lately been proved, Jan., 1830, by an unprovoked attack upon an unfortunate woman in Pennsylvania. The ferocious brute seized upon her as she was passing along the road, and killed her in an instant."[206]

The next case chronologically is the one related by "Grizzly Adams," as he is best known. In the spring of 1854 he was on a hunting trip into Nevada with a friend, when they had an encounter with a Cougar that showed a ferocity worthy of a man-eating Tiger.

"On another occasion," he says, "Solon and I started out very early; and, coming to a spot where two ravines came together, he started up one and I the other. I had not gone more than a quarter of a mile before I heard Solon cry out for help. I bounded up the ridge which separated us, and, upon reaching the top, saw him lying under a large tree in the other ravine, and a Panther on top of him, apparently gnawing into his neck. I shouted to him to lie still, and drawing my rifle, fired at the beast; but, in my anxiety to shoot wide of my comrade, I did not strike the Panther fair, and he bounded off into the bushes and escaped.

"In answer to my inquiries in relation to this singular adventure, Solon told me that as he was walking up the ravine, looking forward, and paying no attention to the trees overhead, the beast suddenly leaped upon his back and struck him to the ground. In the same moment that he fell, he cried out for me, and pulled the cape of his buckskin coat over his neck—and this evidently saved his life."[207]

The next case is from British Columbia, and took place Oct. 1, 1898, near Agassiz within 35 miles of Vancouver. The story is told by P. Nelson, who mentions that the Cougar skin was over $7\frac{1}{2}$ feet from "tip to tip."

"With my partner, J. Hanley, and two other men," he says, "I have been developing a mining property recently between Harrison and Agassiz, about 35 miles from Vancouver. I came down last week, leaving the men working as usual. Last Friday it was rainy, and Hanley, according to the letter and other information I have received, laid off for the day and went shooting grouse. He had an old double-barrelled gun with one of the hammers knocked off, so in reality it was but a poor kind of single-barrelled fire-piece. As I said, he was going to shoot grouse, and he only had cartridges loaded with fine shot. Half an hour after he left camp the Dog—you

[206] The Puma, 1891, p. 602.

[207] Adv. J. C. Adams, pp. 207–08.

should say a good word for him, though I suppose he does not read *Outdoor Life*—treed a Mountain Lion. Then the fun began.

"I've shot a good deal in British Columbia, and I would not have taken the risk for an instant, but Hanley ran up to the tree and with his one load of shot in the gun fired at the Cougar right in the face as the animal looked down preparing to spring. And the spring came next, but the animal had one eye out. It was on an incline and that is what probably saved Hanley's life. The Lion jumped full at his face, and both his claws inflicted wounds on Hanley's shoulders that he will bear to the end of his days. In the momentary struggle that followed, Hanley's face was scratched up, the clothing nearly torn from the upper part of his body, and his breast lacerated as if it had been cut by razors.

"But Hanley had a Dog with him. He is a good chunk of a bull-terrier weighing perhaps 75 or 80 pounds, and the instant that the Lion touched the ground and as quickly knocked over the almost defenseless man, the Dog fastened his teeth into the throat of its adversary of the forest and clung there. Dog and Cougar rolled over and over again in the leaves under the trees until the man gathered himself together with his fast-failing strength and opened fire again—not from the barrel of the weapon, but with the stock he belaboured the Lion over the head until life was extinct and incidentally the gun smashed to pieces. I don't suppose I would have heard of this only my partner wanted a new gun and he sent to me for it.

"Well, the two—the Dog and the man—gathered their scraps together, though both were in a bad plight. At first Hanley thought the Dog was done for, as he had to unloose the jaws that held so tightly on to the throat of the larger adversary. After resting awhile, Hanley carried the Dog to the road, about a mile away, and from there both were helped home by passers-by. The body of the Cougar was obtained later on. According to the letter my partner would be able probably to be out again after a day or two's rest, but you can say for him that I don't think he will go Cougar hunting with a single-barrelled blunderbuss and grouse shot for some little time to come."[208]

The next case, and this is fully authenticated by many witnesses, took place in California not far from Morgan Hill at a place called Glen Willis on Coyote Creek, July 6, 1909.

Miss Isola Kennedy, daughter of John Kennedy of Morgan Hill, had gone for a drive taking with her Henry Merkle of Fruitvale, and Curtis Lane of Morgan Hill, lads aged 10 and 8 years respectively. They were joined by another boy, Earl Wilson.

[208] Outdoor Life, Dec., 1898, p. 82.

"She drove some 700 or 800 yards above the bridge near Glen Willis, and leaving the rig, took a seat upon the bank of the creek while the youngsters waded in the creek a little distance away. She was suddenly horrified to see an immense California Lion jump from the bank and alight upon the back of the [Wilson] boy. The boy fell into the shallow water and the Lion at once left him and ferociously attacked Miss Kennedy, who fought him as best she could with her only weapon, a large hatpin.

"The Lion first seized his intended victim by the leg and dragged her down, then tried to get at her throat. She struggled to her feet and clasped her arms across her face, holding them in spite of the beast's attempts to claw them away. The boys lost no time in running to the camp of the Bay Cities Water Company and giving the alarm. Their appeal was answered by John Conlan and Mr. Fletcher, employees of the Water Company. Mr. Conlan had armed himself with a shotgun, and with this he fired 4 shots at the ferocious beast. The animal did not seem to notice the shots and never for an instant ceased its onslaught on Miss Kennedy.

"In the meantime, Mr. Fletcher, realizing the ineffectiveness of the shotgun, had gone for a rifle, which he handed to Mr. Conlan.

"After receiving the rifle Mr. Conlan says it seemed to him fully 5 minutes before he could get an opening to shoot without danger of killing the young woman, so close was the Lion's assault. The opening finally came, however, but 3 bullets were necessary before the animal ceased to struggle, and almost with its dying gasp it was still clawing at the prostrate girl.

"The struggle between the Lion and the girl lasted fully 15 minutes, and that she survived at all is marvellous. An express wagon was secured, in which she was placed upon a mattress and conveyed to her home in Morgan Hill, about 2½ miles distant.

"She was there treated by Dr. J. T. Higgins, who found that, while she was badly lacerated and scratched on many parts of her body, her left arm and shoulder had suffered most, the arm especially being literally mangled. . . . Miss Kennedy's face will not be disfigured except that the left ear is entirely gone.

"Earl Wilson sustained a severely lacerated neck where the animal's claws had struck, and one ear was split wide open. The boy's wounds are not considered grave.

"The Lion [a female] measured 8 feet from tip to tip and weighed 150 pounds."[209]

The boy was taken with tetanus and died. Miss Kennedy lingered till September, then died of hydrophobia, as is testified by Dr. J. T. Higgins

[209] Outdoor Life, Dec., 1909, p. 599.

of Watsonville, Cal., and fully set forth in *Cal. Fish & Game* for April, 1923, pp. 45–48, "Rabies in a Mountain Lion," by Tracy I. Storer, who points out that prior to that date "there was for California, so far as the writer is aware, only one recorded instance in which a Mountain Lion has, without obvious provocation, attacked a human being. This occurred in Quartz Valley, Siskiyou County, on June 19, 1890, when a seven-year-old boy was set upon and killed by two Lions while he was playing among the foothill oaks at some distance from his home."[210]

The latest case, attested beyond a shadow of doubt, ended, fortunately, not in a tragedy. It took place in Vancouver Island, Sept. 23, 1916. Very full accounts of the affair appeared in all the sporting papers, but that given in the New York *Herald* for Wednesday, Aug. 15, 1917, seems simplest and yet complete.

"An unusual feat of bravery was brought to light to-day by the official report from the office of the Department of the Secretary of State of Canada announcing the confirmation of an award of the Albert Medal of the second class to Doreen Ashburnham, 11 years old, granddaughter of Lord Ashburnham of Sussex, England, and to Anthony Farrer, 8 years old, both of Cowichan Lake, Vancouver Island, B. C.

"The report states that the children left their homes together with bridles, intent on catching their saddle ponies, pastured in a meadow about half a mile from a dwelling at Cowichan Lake. The distance had been almost traversed when they encountered a large Panther which sprang upon the little girl, bearing her to the ground, face downward. Her companion called to her to remain perfectly quiet and leaped upon the Panther's back, overbalancing the beast and permitting Doreen to regain her feet.

"The animal with one of its paws struck the boy full in the face, knocking him down. It then sprang upon him mauling and clawing his back and head, but he called to the girl to run. Although terrified, she refused to leave and began beating the Panther with the steel bit of the bridle over the face and eyes. But unable to see the beast tearing her companion's flesh she deliberately thrust her right arm into the creature's mouth, which sank its teeth into the flesh of her forearm. With her other free arm she continued to beat the Panther until it was blinded and slunk away.

"Both the children were in a critical condition. Anthony had a severe scalp wound.

"A homesteader [named Charles March], with a pack of Dogs killed the Panther. The animal was starving and almost blind. It was 7 feet 9 inches long," yet weighed only 75 pounds.

[210] Outdoor Life, Denver, Colo., Aug., 1915, pp. 162–63.

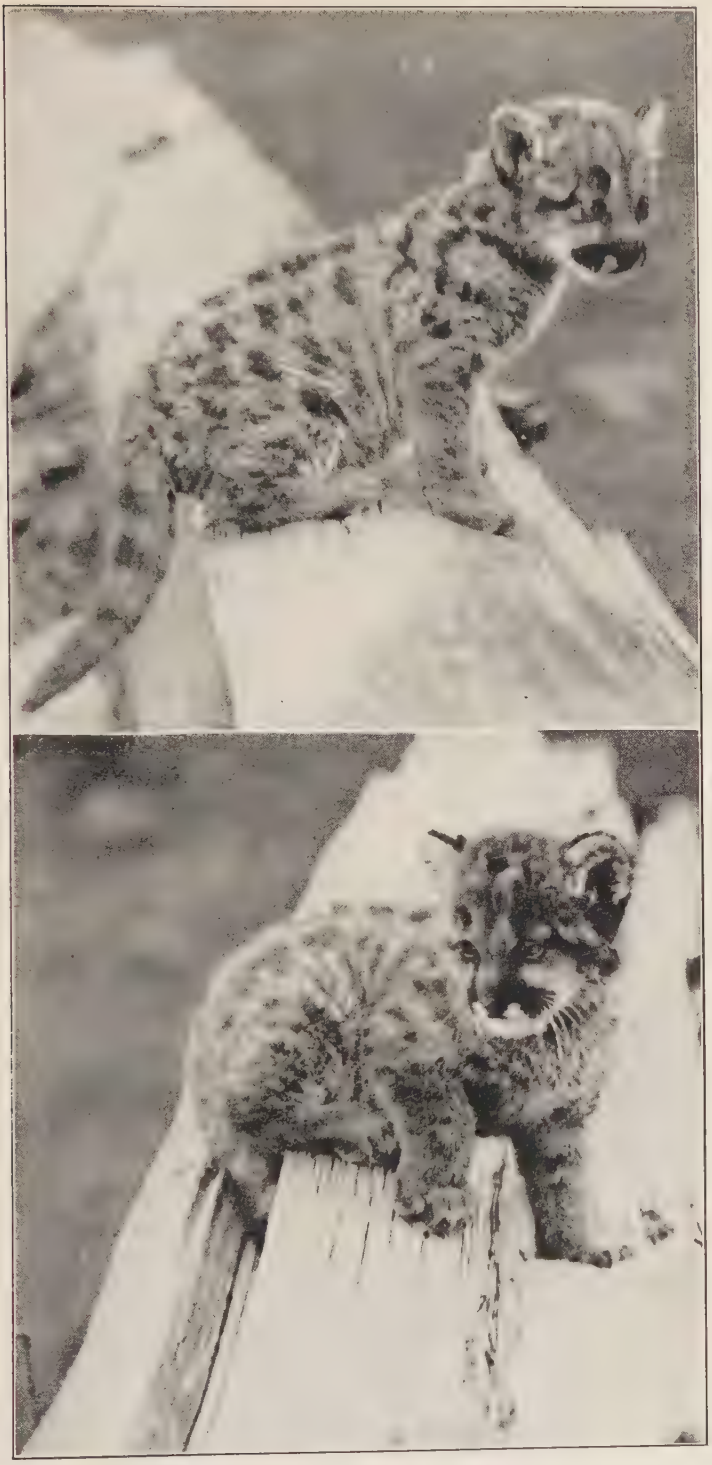

PLATE XVI.—YOUNG COUGARS
From photographs by Wm. L. Finley

When in Venezuela, Feb., 1920, Dr. W. H. Osgood of the Field Museum had an adventure which convinced him that some Cougars at least are ready to attack man. He was collecting birds, etc., in the virgin wilderness 80 miles southwest of Maracaibo, and relates:

"At a turn in the trail and on the crest of a wooded knoll, when I was halfway to camp, feeling the heat of the powerful sun, passing a spot previously reconnoitred carefully for Deer, and hence not so alert as before, I was suddenly confronted by what to my astonished eyes seemed the largest Cougar that ever grew. It started from behind some low bushes at my left and 50 feet, or at most 60 feet, in front of me. I did not see it rise, but it gave the impression of having been lying down. The forest was rather scraggly at this point and the trail I was following was dissolved in several small openings, in one of which the animal appeared, so the sensation of meeting it directly in the trail was lost. It started toward me immediately, growling savagely, its eyes blazing, tail lashing, and if there was any indication that it did not intend to make away with me, I failed to recognize it. It did not come on the run, however, and whether it would have done so or not I cannot say, for its long feline strides were so full of determination I did not care to await developments, but promptly fired a load of buckshot full into its face. It dropped instantly and rolled behind some small bushes which prevented me from firing the second barrel. I had a flash of elation, but the glowering visage was still uppermost in my mind; so, instead of running in with my other barrel, I prudently stopped to reload the one already fired and while the gun was open the Cougar rose, and disappeared in a dense thicket, leaving scattered drops of blood and a trail which I could not follow far without Dogs. Failure to kill the beast of course caused considerable chagrin, but the unique experience was some consolation.[211]

In each of these North American cases, except four, there seems to have been some extraordinary or explanatory circumstances.

In the first, given by Hugh Johnson, the man was mistaken for a Deer.

In the second, the Cougars were defending their cubs.

In the third, the Cougar was not very serious if the woman took the baby safely from it.

In the Pennsylvania case, it seems to have been unrestrained ferocity.

Also in the Grizzly Adams's case.

In the Hanley case the Cougar was at bay and wounded.

In the case of Miss Kennedy the victim died, of rabies.

In the Quartz Valley case, there is nothing to be said in defence of the Cougars. Details, however, are lacking.

[211] Journ. Mamm., Nov., 1920, p. 240.

And in the last, that of the Vancouver children, we are told that the Cougar was very old, blind, and starving.

In considering these cases we are struck by the lack of energy in the attack. An ordinary Cougar can instantly kill a 200-pound Deer, can quickly overcome an Elk, or even a Horse; while a blow of its paw or a craunch of its jaw will put the biggest Dog out of the fight. How, then, could a young woman with a hatpin fight off a vigorous 150-pound Cougar, if he were really trying to kill her? How could two small children, practically unarmed, drive off even a decrepit old Cougar? These are among the puzzles.

Finally, even admitting that 6 of the cases were deliberate and ferocious attacks on human life, we must remember that we have been hounding, hunting, and killing at least 500 Cougars a year in North America, for the last 100 years, and yet we have recorded in that time only 6 attempts on human life by Cougars and but 4 of them successful.

This, then, is a fair summing up of the case: The Cougar is a shy creature, avoiding man and perfectly harmless to him under all normal circumstances. But morbid, diseased, or cranky individuals appear from time to time, as in every species, and these may, under some circumstances, attack and even kill mankind.

Nevertheless, the utterly puzzling circumstances already noted *seem* also to justify the further conclusions:

That under no normal circumstances will a Cougar declare war on man personally, and under no circumstances, normal or otherwise, will it turn on him the full measure of power and ferocity that it holds in reserve for such other fellow brutes as may cross its will.

Curiosity and Friendliness

Having thus disposed of almost all the testimony charging the Cougar with demoniac ferocity and perpetual thirst for human gore, we are confronted by a mass of evidence that indicates a totally different disposition in this wild freebooter of the mountains.

The exploding of the man-eating idea about it had this good effect: men being no longer paralyzed by terror, began to observe, when they met the Cougar. The results were intensely interesting. Among other things, they found that the Cougar—some Cougars, at least—are possessed of a curiosity that is said to be the trail to knowledge; and, further, the animal is naturally disposed to consider man as a friend rather than as a foodstuff.

Enos A. Mills says: "The Lion has extreme curiosity. He will follow travellers for hours if there is opportunity to keep out of sight while doing so. Often during long snowshoe trips I have returned over the

route first travelled. Lion tracks in the snow showed that I was repeatedly followed for miles. In a number of places, where I had taken a long rest, the Lion had crept up close, so that he could easily watch me; and on a few occasions he must have been within a few feet of me."[212]

Says W. H. Hudson: "I have known only one Puma kept as a pet, and this animal, in 7 or 8 years, had never shown a trace of ill-temper."[213]

He amplifies this picture of animal good-humour with a chapter on the positive benevolences of the Puma in his feeling for man—the "Friend of the Christians," as the natives call it.

The incidents that he cites are amazing. They show that the Cougar not only never attacks man, but is naturally disposed to show him friendship, and is ready to act as his friend and protector even to the extent of risking its own life, to save him from such a fierce, strong beast as the Jaguar.

We may be disposed to question the full measure of the surprising conclusions that Hudson arrives at, but he is a good naturalist and his observations cannot be dismissed as entirely baseless.

Professor Romanes, reviewing Hudson's book in the *Nineteenth Century*, May, 1893, quotes the account of the Puma's habits and character given, then says: "I have received corroboration touching all these points from a gentleman who, when walking alone and unarmed on the skirts of a forest, was greatly alarmed by a large Puma coming out to meet him. Deeming it best not to stand, he advanced to meet the animal, which thereupon began to gambol around his feet and rub against his legs, after the manner of an affectionate Cat. At first he thought these movements must have been preliminary to some peculiar mode of attack, and therefore he did not respond, but walked quietly on, until the Puma suddenly desisted and re-entered the forest. This gentleman says that, until the publication of Mr. Hudson's book, he had always remained under the impression that that particular Puma must have been insane."

In the Coyote "Life" are given details of a pleasant friendship between a Cougar and a Coyote.

Hugh Johnson, after a lifetime among the Cougars of Montana, says: "A number of times I have been followed by Panthers and I have heard of other men that had the same experience, but none of those men were ever attacked by the animals.

. . . . . .

"I knew of a case over in Oregon, a number of years ago, when two little children, a boy and a girl, were followed through the woods for a mile

[212] Watched, p. 199.

[213] Nat. La Plata, pp. 40–41.

or two by a Panther. They were going from a neighbour's house to their home. The Panther came out of the woods and trotted along behind them and beside them, and they thought it was a Dog and tried to make friends with it. It never did anything but just keep along with them, and when they got to the little fence around their own house, it went off into the woods. The mother saw it as it was going away, and was terribly scared, but the children did not mind it."[214]

H. W. Shoemaker tells of a Pennsylvania Panther, which followed a small boy to school every morning for a week.[215] He also writes me as already noted: "They often looked in the windows of mountain cabins, in Pennsylvania. One surprised the Askey family of Cold Spring, Center County, Pa., in the winter of 1922."

J. Fannin tells of two children going to school near Victoria, B. C., "when a Panther sprang out in front of them and trotted on ahead."[216]

Chas. F. Lummis, during his famous walk from Maine to Peru some 30 years ago, had a similar friendly visit from a Cougar as he tramped through Mexico, but I must wait until he publishes the details in his own words.

The following, by Roosevelt, illustrates, I think, nothing but the mild curiosity of the animal. The incident was the experience of the Mathes Brothers of Meeker, Colo.

"The three men, with one of their two cattle Dogs, were walking up the valley not half a mile above the ranch house, when they saw a Cougar crossing in front of them, a couple of hundred yards off. As soon as she saw them she crouched flat down with her head toward them, remaining motionless. Two, with the Dog, stayed where they were, while the other ran back to the ranch house for a rifle and for the other Dog. No sooner had he gone than the Cougar began deliberately to crawl toward the men who were left. She came on slowly but steadily, crouched almost flat to the ground. The two unarmed men were by no means pleased with her approach. They waved their hands and jumped about and shouted; but she kept approaching, although slowly, and was well within a hundred yards when the other brother arrived, out of breath, accompanied by the other Dog At sight of him she jumped up, ran off a couple of hundred yards, went up a tree, and was killed. I do not suppose she would have attacked the men; but as there was an unpleasant possibility that she might, they both felt distinctly more comfortable when their brother rejoined them with the rifle."[217]

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[214] Forest & Stream, Oct. 5, 1907, p. 532.

[215] Penn. Lion, pp. 23–24.

[216] Forest & Stream, March 6, 1897, p. 184

[217] Scribner's, Nov., 1901, p. 557.

Many more cases might be cited that show the same disposition in the Cougar, and the new estimate of the creature was quite accepted by the naturalists. But they were not quite prepared for the next contribution.

Playfulness

"The most playful animal on earth; even when full-grown it still has the heart of a kitten." This is the verdict of many good naturalists, and in corroboration I give some pointed extracts. The first from the well-known naturalist, Enos A. Mills, who writes in his account of a ski-trip over the Continental Divide, Colorado:

"Southward I travelled along the nearly level expanse of undrifted snow. Looking back along the line of my ski tracks, I saw a Mountain Lion leisurely cross from east to west. Apparently she had come up out of the woods for mad play and slaughter among the unfortunate snowbound folk of the summit. She stopped at my tracks for an interested look, turned her head, and glanced back along the way I had come. Then her eyes appeared to follow my tracks to the boulder pile from behind which I was then looking.

"Playfully bouncing off the snow, she struck into my ski prints with one forepaw, lightly as a kitten. Then she dived into them, pretended to pick up something between her forepaws, reared, and with a swing tossed it into the air. Then her playful mood changed and she started on across the Divide. After several steps she stopped, looking back as if she had forgotten something, but was a little too lazy to retrace her steps. But finally she came back. She walked along my ski tracks for a few steps, then began to romp, now and then making a great leap forward, and rolled and struck about with the pretence of worrying something she had captured. She repeated this pantomime a few times, and then, as if suddenly remembering her original plan of action, again walked westward. Arriving at the summit she hesitated, and when I saw her last she was calmly surveying the scenes far below."[218]

W. H. Hudson gives a pleasing picture of the Puma's playfulness in South America, and since it is a very close kin of our Cougar, if not identical, it has value as a side light on the character of our animal. "The Puma is," he says, "with the exception of some monkeys, the most playful animal in existence. The young of all the Felidæ spend a large portion of their time in characteristic gambols; the adults, however, acquire a grave and dignified demeanour, only the female playing on occasions with her offspring; but this she always does with a certain formality of manner, as if the relaxation were

[218] Advent. Nat. Guide, pp. 46–47.

indulged in not spontaneously, but for the sake of the young and as being a necessary part of their education. Some writer has described the Lion's assumption of gaiety as more grim than its most serious moods. The Puma at heart is always a kitten, taking unmeasured delight in its frolics, and when, as often happens, one lives alone in the desert, it will amuse itself by the hour fighting mock battles or playing at hide-and-seek with imaginary companions, and lying in wait and putting all its wonderful strategy in practice to capture a passing butterfly."

Speaking of the Puma which was kept as a pet for 7 or 8 years, Hudson says: "When approached, he would lie down, purring loudly, and twist himself about a person's legs, begging to be caressed. A string or handkerchief drawn about was sufficient to keep him in a happy state of excitement for an hour; and when one person was tired of playing with him he was ready for a game with the next comer."[219]

In the Eagleton, Pa., case detailed in the section on "Pennsylvania Records," Senator Quigley tells of the whole family frolicking together in their dust bath.

Domestication

It is well known that the Cougar is easily tamed. Edmund Kean, the actor, long kept a pet Cougar. Sir William Jardine says of it: "The celebrated Kean possessed one which followed him loose, and was often introduced to company in his drawing room. We have frequently been in company with the animal. . . . It was extremely gentle and playful, and showed no symptoms of ferocity to the strangers who came to see it. Its motions were all free and graceful, and it exhibited the greatest agility in leaping and swinging about the joists of a large unoccupied room in the old college of Edinburgh.

"'While in London,' observed Mr. Wilson, 'it made its escape into the street during the night, but allowed itself to be taken up by the watchman, without offering even a show of resistance.'"[220]

The tractable and docile disposition of the Cougar has long been known, but it is not generally understood that at one time the creature served mankind as help in the chase. The following extract is history from the "Tradition of the Cheyenne Indians":

"The first help we had in getting a living was brought about in this way: A Cheyenne woman lost a small child that was nursing. Soon after her child died she had found a nest of young kitten Panthers. She waited

[219] Nat. La Plata, pp. 40–41.

[220] Naturalist's Library, xvi, p. 133.

until the mother Panther was away to hunt food; then she went and took one of the young Panthers out of the nest and ran off with it. The young Panther gave a moan or whine which sounded like the cry of the baby she had lost, and the reminder of her dead babe caused the woman to hug the kitten Panther to her breast, and when she did so the kitten Panther, which no doubt was hungry, began nursing the woman. Thus it was taking the place of her dead babe, and an affection for the kitten Panther sprang into her heart, and the woman loved this kitten Panther and she raised it as if it had been her own child, and as it grew up it would kill Deer and other large game and furnished food for the Cheyennes much easier than they could get it in any other way.

"So other women got hold of young Panthers, and raised them the same way as this woman had done. And they not only got by the help of these Panthers their food much easier than they had done previously to their getting the Panther, but they had to take the hide off the Deer and other game they got by the help of the Panther."[221]

Summary

There are three important facts that should be kept in mind while considering the mass of evidence on the disposition of the Cougar.

First, the creature is naturally of a mild and playful disposition when not goaded by hunger, fear, or danger to its young.

Second, all these highly developed animals display an amazing amount of individual variation; some may be fierce and some may be gentle.

Third, all wild animals learn to fear man and let him alone in regions where guns are in general use.

In view of these facts, then, I should expect the Cougar to be more dangerous to man when Cougars were more numerous and man less perfectly armed than now.

Strange Instances

The most amazing and amusing example of Cougar effrontery I ever heard of comes from Vancouver, B. C. In the famous and beautiful Stanley Park of that city is a well-planned and thriving Zoo; the Deer are happily placed in paddocks instead of cage yards, and among these, as in a private preserve of his own, a wandering adventuresome Cougar decided to settle down and enjoy life after his own fashion. The story is thus told in a current magazine:

"A very unusual incident, the hunting and shooting of a Cougar in a

[221] Translated by John H. Seger, Arapaho Bee Print, Colony, Okla., 1905.

city park, took place at Vancouver. In the world-famed Stanley Park the keepers some time ago discovered a dead Deer. Poison was laid and traps were set, but the marauder escaped and the continual toll of dead animals, despite all-night watching and various other expedients, baffled everyone. At length a hunt on a large scale with Dogs and experienced hunters took place. The animal was "treed" and one shot fired, with the result of wounding the animal. The Cougar dropped from the tree, wounded one of the Dogs badly, and escaped up another tree. Four more shots were put in and the animal fell dead. For a hunt like this to take place in a park near a city the size of Vancouver shows how near we are to the time when wild animals roamed with perfect freedom over the places where cities now stand. Apparently the animal crossed the Inlet at low water and looked upon the Park as his own preserve."[222]

R. H. Billings, in his interesting Cougar article, thus gives an experience of his guide Terrioux in the Cascade Mountains. Terrioux had just landed a fine trout and "put it on a rock several feet behind me so if it came to life again it couldn't wiggle back into the creek. I threw my line in again but I guess my fishing tackle did not appeal to them as I did not get another bite. I was thinking of going back to camp when I heard a noise behind me. I looked around but as the light was getting dim I could not see much. I was about to reach for my fish when I glanced up and saw one of the largest Cougars I had ever seen. He was only a few feet from me and was sneaking up to get my fish; when I saw that beastly Cat trying to make away with my fish, I was so mad that I did not stop to think of the consequences, but brought my fishing pole down on his head with all my might. For a long time afterward I could not see how I had the nerve to do it, but I was so peeved that I did not stop to think. The Cougar made one jump and was out of sight before I could get in another whack at him; he was so surprised that he left my fish behind him. He did not stop to argue but he spoiled my appetite for lunch. I kept a good fire going all night, and several times I could hear the big Cats yowling. About daylight I saw one of them sneaking down toward the creek. I grabbed my rifle and got in a quick shot, dropping him in his tracks. As I shot him I saw another one go like a streak of lightning up the side of the mountain. I managed to stop him just as he got to the top of a little ridge that he was making for. He was shot in the shoulder and rolled around in the snow, biting at his side; another shot stretched him out. They were large ones and evidently mates."[223]

R. B. Marcy writes: "John Bushman, our interpreter, was much

[222] Rod & Gun in Canada, January, 1912, p. 918.

[223] Field & Stream, April, 1918, p. 102.

PLATE XVII.—MY FIRST MEETING WITH A COUGAR, 1899
By Ernest Thompson Seton, 1904

surprised to-day, on calling a doe toward him with a deer-bleat, to see a small fawn following after its mother; but imagine his astonishment when immediately behind the fawn came a huge Panther bounding rapidly toward him, and in a twinkling he fastened his claws in the vitals of his victim. He, however, in this instance, caught a tartar, and paid dearly for his temerity, as John, with a spirit of indignation that would have done credit to the better feelings of any man, raised his rifle, and, instead of killing the Deer, which was entirely at his mercy, planted the contents in the side of the Panther.

. . . . . .

"The Bear, the Wolf, and the Panther often come at the call of the bleat, supposing they are to feast upon the tender flesh of the fawn."[224]

[224] Expl. Red River, 1854, pp. 66–67.

Chapter the Last

This is the end of my attempt to compile and give with reasonable fullness a history of this animal; to put together the few scattered fragments that have been collected of the great mosaic, that in its completeness should reveal to us the powers and mind of our fellow hunter, the Cougar.

But vast and baffling are the gaps; great vacant spaces cover most of the field. Outside of what it kills, and how to kill it, I find little indeed on record. A score of questions come up, the answers to which should be the key to many other secrets.

When and why does it purr? Does it have a succession of sounds; that is, a song, to express joy and vigour? What is the meaning of spitting, if it does spit? Why does it lash its tail? Can it really see in the dark? How does it communicate with its fellows other than by sound? Does it go to special trees to splash them with urine? Does it bury its dung? Does it use odour posts? What are its diseases? How does it combat parasites? How does it medicate itself? Does it use sun bath, water bath, or dust bath? Does it ever form friendships with other animals? Does it ever assume the duty of protecting man? Does it store food for the far future? Does it pair for life? Does it resent encroachment of other Cougars on its hunting grounds? Does it ever make long, adventurous journeys hundreds of miles from home? Are there bachelors or old maids among them? What are its amusements? Has it any social games or meeting places? To what age does it attain? How do most die?

The answers are yet to be found out, and the larger, undreamed-of fields to which those answers would lead are yet unknown.

For thirty years I have kept in touch with all that has been written or is known of the American Cougar. The result has been a huge mass of material, enough to make several octavo volumes, and of this mass now before me, and herewith given you in condensed form, fully 99 per cent. deals with how we may hunt, pursue, murder, destroy this wonderful, beautiful animal. Of the 1 per cent. remaining, about one half deals with alleged, more or less doubtful, attacks of this splendid creature on man, or his material interests in the form of flocks and herds. Less than half of one half of the remainder deals with the real animal, its home life, its gentleness, its

amusements, its struggles, its gropings after something better than the world in which its superb animalism makes it king supreme.

I am smitten with indignation and shame when I realize these things. I say to our authorities in charge of such matters, who publish proudly every year their shocking lists of Cougars killed in the West: "Yes, I suppose so—it is so and must be; your masters demand that you do it. But meanwhile, what have you wise men added to our knowledge of this glorious exemplar of the laws that made the world? With all your opportunity, and your covert admiration of the noble brute that you hound with blatant advertisings to its death, what have you given to another generation of its inner life, its home life, its conquest of the laws of heat and space, its perfect motherhood and—I think—at times, its perfect fatherhood?"

All that is known, every shred of fact recorded known, I have gathered, so far as I have been able, into these meagre pages, and, reading them, I blush for those I herd with. "Kill, kill, kill," is their cry, their only doing, and their cry. Fifty pages there are of senseless, brutal killing, and only one of "Stop! Are we not robbing our people and ourselves of something more beautiful and more worth while than countless works of human art on which we have so wisely lavished untold gold?"

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LIFE III—THE OCELOT

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Ocelot, Chibiguazu, Tiger-cat, or Leopard-cat

Felis pardalis Linnæus

(L. *Felis*, a Cat; *pardalis*, leopard-like)

Felis pardalis Linnæus, 1758, Syst. Nat., ed. 10, I, p. 42.
Type Locality—Mexico [Vera Cruz]

Mexican Native Names, *Tlacoozlotl*, *Tlalozelotl* (Hernandez), *Tigrillo*.
Spanish-American, *Chibiguazu*.
Costa Rican, *Manigorda* or "Fat Paws."[1]

"Some of the Guaranese call the domestic Cat *Chibi*, and others *Mbaracayá*. In the same manner, some give the present wild animal the name of *Chibi-guazu*, and others that of *Mbaracayá-guazu;* both appellations signifying *Great Cat.*"[2]

This beautiful Cat is known at once by its size—that is, it is twice the size of a House-cat or about the same as a Bobcat—by its remarkable decoration of hollow blotches, stripes, and spots, and its long, leopard-like tail. Seen at a distance, it might pass for a small Leopard, whence one of its names. At closer range, it is a big, long-tailed gray Cat, with chains of brown along its sides.

In addition to the characters of the genus *Felis*, the Ocelot has the following:

Size. A ♂ of the Northern race is about 50 in. (1271 mm.) in total length; tail, 15 in. (381 mm.); hind-foot, 5½ in. (140 mm.); height at the shoulders, about 18 in. (457 mm.).

The ♀ is smaller; that is, about 40 in. (1016 mm.), in total length; tail, 13 in. (330 mm.); hind-foot, 5 in. (127 mm.).

Weight. A large and very fat male is given by Azara at 35 lbs., the females are less.[3]

Colour. It is of little use to detail the colour, spots, or pattern of this animal, since no two are alike.

[1] E. R. Alston, Biol. Cent. Amer., p. 60.

[2] Azara, Nat. Hist. Para., p. 226.

[3] As above, p. 229.

The Ocelot coat is the most wonderful tangle of stripes, bars, chains, spots, dots, and smudges. It has generally four stripes on the neck, two or three long links of black sausages down the back, and along the sides chains of black-edged, brownish blotches which look as though they were put on as the animal ran by. All else is dabs, smears, and broken rings of black.

Before me now is a beautiful ♀ from Escuinapa in Sinaloa on the west coast of Mexico, about lat. 22° (Am. Mus. 24651). In general, it is of a soft gray shaded into white on the lower parts, and tinged with buff strongly on the head, neck, and back, and slightly on the outside of the legs.

Everywhere it is spotted or striped with black; the black spots on the belly are an inch across; on the legs and crown, the size of peas; the stripes are longest on the back of the neck and widest down the spine; as usual, there is a black stripe across the throat and another across the chest; on the tail are 6 solid and 4 broken bars of black, none of them complete on the under side.

But the most characteristic markings are the long irregular chains of black-edged brown blots along the flanks.

The usual cat-mark—that is, a dark back to the ear with a light spot on it—is here rendered into black and white.

Compared with some of its South American relatives, this Ocelot is small and very pale in colour.

A male collected at Fort Verde, Ariz., is a better representative of the race *griffithii*, for it is much smaller than the Escuinapa female, much paler in colour, and its fur is much deeper and softer; altogether it is the coat of an animal that expects to face a winter of frost and snow.

A Sonora specimen before me is quite different in details of colour and pattern from the foregoing female, and yet the verbal description applies equally well to both.

Races

The following races have been recognized by Dr. J. A. Allen in his "Notes on the Smaller Spotted Cats of Tropical America":[4]

pardalis Linnæus, a large strongly coloured animal. T.l., Vera Cruz.

griffithii Fischer, a pale form of smaller medium size, found north to the Rio Grande Valley and well into Texas; and even to Arkansas. T. l. (northern) Mexico (=*albescens* Pucheran).

mearnsi Allen, a large dark form. T. l., Talamanca, Costa Rica.

[4]Bull. Am. Mus. Nat. Hist., vol. XLI, art. VII, pp. 341–419, Oct. 3, 1919.

sanctæ martæ Allen, a very small pale form. T. l., Bonda, Santa Marta, Colombia.

maripensis Allen, a large dark form. T. l., Maripa, Caura District, Venezuela.

tumatumari Allen, a large dark form with exaggerated dark markings. T. l., Tumatumari, British Guiana.

aequatorialis Mearns, similar to *mearnsi*. T. l., Paramba, Ecuador.

pusæa Thomas, a small pale form from the south coast region of Ecuador. T. l., Chongon, Ecuador.

chibigouazou Griffith, a light-coloured form. T. l., Paraguay.

Range, with Map

Thus the Ocelots in various races are, or were, distributed throughout the low forests of the Southwest from Arkansas southward over Central America, and most of South America, as far as Paraguay.

In primitive days, and as late as 1857 at least, the Ocelot was found throughout the lower country of Texas, and ranged as far north as Red River.[5] It was recorded from Arkansas,[6] and had occasionally been taken in Louisiana. It was so well known that a part at least of its glossy decorated robe was the proper saddle finish of every gay-clad horseman who rode the Southern plains; and the creature was as much a part of the native wild life as the Fox is of New England to-day.

In 1845, J. W. Audubon described it as quite well known in Texas.[7] In 1859, A. Schott, a naturalist on the Mexican Boundary Survey, says:[8] It is "quite common through the Western wilds." In 1905, Bailey says Ocelots were still found over southern Texas, and on the authority of Merritt Cary, gives it as fairly common along the lower Pecos.[9] In these remarks we find reflected, however, the steady shrinkage of its territory, as well as the dwindling of its numbers.

E. W. Nelson writes in 1918:[10] "In the lower Rio Grande Valley of Texas the Tiger-cat is rather common." But from all other places within

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[5] Baird, Pac. R. R. Rep., VIII, p. 87.

[6] Zoöl, 1885, p. 149. Voyage autour du Monde sur la Frégate La Vénus, M. Isidore Geoffroy St.-Hilaire.

[7] Q. N. A., II, p. 260.

[8] Mamm. Mex. Bd., p. 10.

[9] Texas, p. 166.

[10] W. A. N. A., p. 416.

our limits it is so nearly gone that it is worth while spotting the map with every record made this century.

Records in the United States

Those shown on the map are taken from Bailey's "Texas," pp. 166–67. The statement runs:

"The Ocelots are still found in brushy or timbered country over southern Texas, as far north as Rock Springs and Kerrville, and up the Pecos Valley to the region of Fort Lancaster. One killed near the Alamo de Cesarae Ranch in Brewster County, between Marfa and Terlingua, in 1903, was reported by G. K. Gilbert, and later its beautiful light-gray skin was purchased from Mrs. M. A. Bishop of Valentine. This seems to be the westernmost record for the State. Farther east, Ocelots are still reported as very rare about Beaumont and Jasper, near the eastern line of the State, and farther north, near Waskom and Long Lake. Early records carried their range across into Louisiana and Arkansas, but it is doubtful if at the present time they are to be found in the United States beyond the limits of Texas. Most of the records are from hunters, ranchmen, or residents of the country, who know the animal by the name of Ocelot or Leopard-cat, or describe it as a long-tailed, spotted Cat the size of a Lynx. In 1902, at Sour Lake, N. Hollister reported 'several so-called Leopard-cats killed near there' and says: 'They are described as about the size of the Wild-cat, but of a different build, spotted and with a long tail.' Near Beaumont, Harry C. Oberholser reported them as occasionally killed in the woods along the Neches River. In Kerr County, Mr. Moore, the sheriff, told me that he saw a beautiful skin of a large, long-tailed spotted Cat that was killed 10 miles south of Kerrville the latter part of June, 1902. At Rock Springs in July of the same year, Mr. Gething told me that each year a few Ocelot skins were brought into the store for sale. In his report from Sheffield, Merritt Cary says: 'I am informed that Leopard-cats are fairly common in the cedar brakes along the Pecos southeast of here.'"

Numbers

If one be guided by what is seen of this animal as one travels through its country, it is, of course, extremely rare. But all observers agree that it is an adept at keeping itself hidden; it is rarely seen, even in such countries as Paraguay, where, according to Azara, it is so common that his friend, Noseda, caught 18 individuals in 2 years, within 2 leagues circumference of his pueblo or village.[11]

[11] Nat. Hist. Para., p. 226.

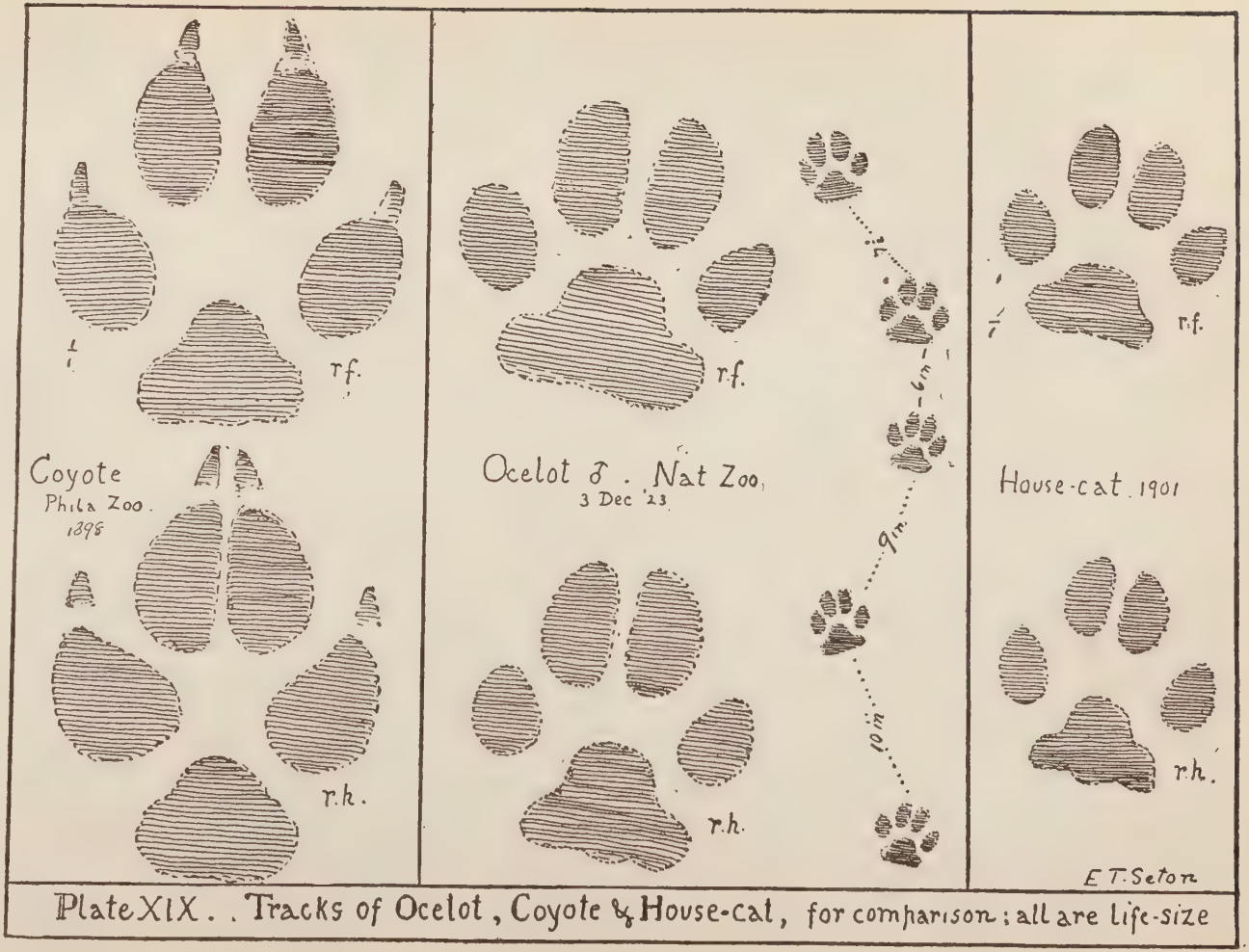

Plate XIX. . Tracks of Ocelot, Coyote & House-cat, for comparison; all are life-size

PLATE XX.—OCELOTS, SHOWING VARIETIES OF PATTERN

Nos. 1, 2, 3, 4 & 6.—All males, taken in Peru by H. H. Heller

All rights reserved by H. H. Heller

No. 5.—Taken in New York Zoological Park by Elwin R. Sanborn

PLATE XXI.—SKIN OF OCELOT FROM DESCALVADOS, MATTO GROSSO, BRAZIL

Cut loaned by the American Museum of Natural History

From Allen's "Smaller Spotted Cats," 1919, p. 403

Not only are no two Ocelots exactly alike in the pattern of their spotted coats, but the two sides of the same animal are wholly different in detail, as illustrated in this plate

Haunts

His favourite surroundings are impenetrable thickets so dense that Dogs can hardly get in and hunters not at all.

In a square mile of chaparral, a dozen Ocelots might pass their whole lives unknown to any man; for they need never venture out and hunters cannot venture in. Their every forthgoing is nocturnal, so that they easily escape all notice of their arch-enemy. Indeed, the Ocelot has the reputation of being able to conceal himself more effectively than any other large animal in America.

To complete his furtive modes of life, he loves the darkness so wholeheartedly that moonlight, and even starlight, seem to put a check on his enterprise and daring. Having passed the day behind the safe barb-wire entanglements of his chaparral home, he waits till the evening light is gone and the dusk has given place to dark. A black and stormy night is much to his taste. On such a night, he will boldly risk the Dogs that guard the barnyard, and make poultry raids that he would never dream of in calm weather or moonlight.

How he finds his various prey aloft in such a time of noise, wind, and blackness, is a puzzle, and a tribute indeed to the accuracy of the creature's senses. Yet he does find them, and according to all authorities, climbs the trees, going direct to roosting fowls, carrying off half-a-dozen in a night, and leaving sometimes a number killed that he could not carry off—just as some other burglars, when alarmed by danger of discovery, may hurry off, leaving a part of their swag behind them.

The Ocelot is a forest-loving animal, and is just as much a tree-climber as our common Cat, which means that he is not in the Squirrel and Monkey class, but he can climb easily and quickly whenever his purpose is served by so doing. He often goes bird-nesting up aloft; he even takes a noonday nap upstairs, and commonly betakes himself to a tree when in danger from his racial enemies of the Dog tribe. Ordinarily, however, his life is spent on lower levels. He frequents dense cover—either heavy timber, thorny thickets, or rocky hillsides—preying chiefly on the lesser foresters that are forced to acknowledge him their overlord.

It must not be supposed, however, that the opening yelp of a pack of hounds on his trail sets the Ocelot scurrying up the handiest tall timber. This royal Cat is much at home on the ground. He can run like a Fox, can blind-hop, back-track, and double-cross his trail. He is, moreover, so adept at threading the murderous bayonet-clad cactus, mesquite, huisache, and nopal thickets, which are double-edged, sharp-set, and poison-barbed for

Dogs and huntsmen, that in a finish show-down where he has choice of ground, he commonly mocks at all the hunt, and sends the wretched baffled Dogs back home with as many rips and jags from thorns as though the Tiger-cat himself had mauled them at his own good vigorous pleasure.

Sometimes, however, the hounds are over-many, or the mesquite patch too small, so the Ringtailed King of the Underbrush must take a chance on an overland straightaway. Here he shows that he can hold his own with the speediest—for a time. But he is a sprinter, the hounds are bred for cross-country Marathon work; and within a mile, if no new friendly thickets intervene, the race is up, and the Ocelot, like all the Cat-kind when Dog-harried, accepts the high hospitality of some convenient tree. Here he is perfectly at home and would be safe but for the hunter and the rifle, that inevitable combination of Dog, man, and gun that so unfairly, fast and ever faster, is depopulating, yes, desolating, our one-time joyous wilds.

So far as known, the last refuge of an Ocelot is never a hole in the ground, never in the water, rarely in a hollow trunk, but nearly always in the high branches of a large tree.

His Mild Disposition

When one reads of the terror spread in Africa, and notably on one occasion in the camp of the Roosevelt expedition, by a single Leopard weighing under 70 lbs., one turns to the strong-built, husky-looking Ocelot with increased respect. The reflected glory from its African cousin makes one expect to find a creature of amazing prowess, for often he weighs half as much as the Leopard. But here we meet a disappointment. The Ocelot is one of the mildest-mannered Cats that ever cut a throat or lapped hot blood. For this reason, indeed, Cuvier called the species *mitis*, which means "tame and gentle." Even when subjected to the aggravations and indignities of cage life, his patient spirit does not openly rebel or seem to become embittered. As Bachman remarks, and most of us have seen, he never rages against the bars, or strives to strike out through them at the incautious onlooker who ventures overnear as do Wild-cat, Leopard, and others of his kin.[12]

His Simplicity and Good Nature

All the details we have of this superb creature combine to picture him as a big, simple-minded, good-natured Cat.

Azara gives a long account of those he kept in a large cage during his

[12] Q. N. A., II, p. 261.

stay in Paraguay. I do not know of any other Cat of which it would be safe to keep an indiscriminate dozen in one cage, especially when all were wild and newly caught. Yet they seem to have lived quite amicably together. "They spent almost the whole day," he says, "lying rolled up in the shape of a ball; and the one which wished to stretch himself did not do so until he had first licked the Chibiguazu at his side," which politeness we might doubt had we not seen that very same thing among our domestic Cats.

Our writer continues: "They spent the twilight and night in walking to and fro, close to the sides of their den; and if another Chibiguazu crossed or interrupted this exercise in any way, they puffed and made gestures like a Cat when irritated, without using their paws; but they never quarrelled, except when very much irritated, and then they struck at each other with their fore-paws."[13] On page 227 he offers this evidence of their guilelessness.

"Some of these escaped and were caught again two or three times in the same trap, being recognized by cuts in their ears and other signs."

In all their habits and manners they were like big House-cats. They licked and dressed their fur, washed their faces with their paws, sniffed, puffed, yowled, and snorted like our fireside friend; which probably implies that they also mewed, caterwauled, and fought like Cats in the mating season; and, of course, their eyes shone at night.

Noseda, Azara's friend, caught an Ocelot kitten. "It became so thoroughly domesticated," he says, "as to sleep in the skirts of his clerical gown and went about loose; and he affirmed that no animal could be more tractable. The neighbours, however, killed it, as it devoured the poultry."[14]

Nelson remarks that in a wild state "the Tiger-cat is much more quiet and less fierce in disposition than most felines. It excited my surprise and interest whenever I trapped one, to note how nonchalantly it took the situation. The captive never dashed wildly about to escape, but when I drew near, sat and looked quietly at me, without the slightest sign of alarm and with little apparent interest. A small trap-hold, even on the end of a single toe, was enough to retain the victim. On one occasion, while a Cat thus held sat looking at me, it quietly reached to one side and sank its teeth into the bark of a small tree to which the trap was attached, and then resumed its air of unconcern."[15]

Nevertheless, it is well to avoid the mistake of confusing this philosophic calm with mere poltroonery, for Howard Lacey, the hunter-naturalist of Kerr County, Texas, writes: "They are heavier and more muscular than

[13] Nat. Hist. Para., pp. 227–8.

[14] As above, p. 229.

[15] W. A. N. A., p. 416.

the Bobcat, and our hounds, that always make short work of a Bobcat, find the Leopard-cat a tough proposition."[16]

Food Habits

Chiefly a Cat-of-the-night, the Ocelot takes most of its prey on the ground and in the woods. A full list founded on stomach contents, analyzed by experts, would certainly comprise every bird and reptile in its range and every four-foot small enough for it to master. From this I suppose we must except the harpy eagle, the poisonous snakes, the Skunk, and the Southern Porcupine, for the obvious reasons that they have weapons quite adequate even to such an occasion as an Ocelot.

Lacey says: "These Cats do much damage to the stockmen, being especially fond of young Pigs, kids, and lambs. They probably also kill fawns and turkeys, and, like many other Cats, often hide what they cannot eat under a heap of leaves."[17]

Other observers make much mention of its toll of birds and bird-nests, and E. W. Nelson says:

"By night it wanders along trails over a considerable territory, seeking its prey. Birds of all kinds, including domestic poultry, are captured on their roosts, and Rabbits, Wood-rats, and Mice of many kinds, as well as snakes and other reptiles, are on its list of game.

"Its reptile-eating habit was revealed to me unexpectedly one day, in the dense tropical forest of Chiapas. I was riding along a steep trail beside a shallow brush-grown ravine when a Tiger-cat suddenly rushed up the trunk of a tree close by. A lucky shot from my revolver brought it to the ground, and I found it lying in the ravine, by the body of a recently killed boa about 6 or 7 feet long. It had eaten the boa's head and neck when my approach interrupted the feast.

"The first of these Cats I trapped in Mexico was captured the night after my arrival, in a trail bordering the port of Manzanillo on the Pacific Coast. The rejoicing of the natives living close by evidenced the toll this marauder had been taking from their chickens."[18]

Azara comments thus on the food habits of his captive Ocelots: "When first caught, they devoured 5 pounds of flesh per day; but afterward 3 were enough. We prepared a ration for each of the 12 or 14 individuals, and they took it with their paws according to [i. e., in order of] the length of time they had been in confinement, without the others offering them the slightest in-

[16] Texas, p. 167.

[17] As above.

[18] W. A. N. A., p. 416.

PLATE XXII.—OCELOT
Photograph by Elwin R. Sanborn, New York Zoological Park

PLATE XXIII.—OCELOT HUNTING
From a drawing by Ernest Thompson Seton
Loaned by the New York Zoological Society

terference; but if the animal whose turn it was to receive a portion disregarded or did not devour it immediately, another snatched at it, and the lawful proprietor made no defense save by sneezing and occasionally by blows with its forepaws."[19]

Adjoining the cage he made an enclosure into which he put Rats, fowls, ducks, young Dogs, or other live food, then opened the Ocelot cage so they might enter and kill. Each Ocelot selected and attacked a victim. Dogs as big as themselves, however, they did not touch, for each Ocelot masters his prey alone. Small Dogs or Cats were seized by the nape of the neck in the Ocelot's jaws, pinned flat to the ground, and held, body and limbs, until dead. Birds were plucked clean of their feathers before being eaten.

"Cat's flesh," he says, "seemed to produce the itch, which fretted them, making them mew like Cats, and finally destroying them. They also ate snakes, vipers, and toads; but these occasioned violent and continued vomiting, so that they wasted away to complete skeletons and in a few days perished."[20]

The Den

The home den of the Ocelots is nearly always in a rocky cave, though there is some reason for believing that occasionally they content themselves with a hollow tree. Wherever it is, no doubt it is comfortably lined, for Azara's captives were very dainty about their bedding. Whether supplied with straw, twigs, or sticks, they carefully worked it and chewed it over bit by bit, till every part of it was reduced to chips a quarter of an inch long. So interested were they in the material of the couch that the attendant needed only leave it within reach outside the bars. The Ocelots would drag it through and proceed to prepare it in the manner they thought best.

Young

In Northern lands, Mother Carey arranges the love season so that the offspring arrive in the pleasantest, mildest seasons of the year. But far south, in the warm and snowless lands where dwells the Ocelot, no season is hard, so come when they will, the little ones are welcome and well-fed. From which I argue that they come at any time of the year. Yet all the evidence at hand goes to show that the 2 young ones—always 2—arrive in September or October, and reckoning back then, by analogy, their parents went honeymooning in the lovers' month of June.

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[19] Nat. Hist. Para., p 228.

[20] As above.

The following paragraph is good corroboration of this, and maybe sets us thinking, wondering, and questioning.

Says H. Lacey: "I have never had the luck to find any kittens, but a friend of mine ran a female into a cave with his hounds and killed her; then the Dogs went into the cave and killed and brought out 2 kittens a few weeks old. This was in November. On another occasion he killed a female that in the course of a few days would have brought forth 2 kittens. Another of my neighbours killed a female and 2 kittens in a cave near here. This was also in November, and the kittens had not yet got their eyes open."[21]

Strange Instances

Azara was amazed to find that his captive Ocelots always "preferred easing themselves in their drinking vessel."[22] At first sight this seems a very unclean habit, and yet it proves to be the remnant of a very necessary effort at sanitation. All of the Cats are very clean. When they can bury their dung, they do so; and when they cannot, some, at least, drop it in water—a habit more fully noted in the "Life of the Bobcat."

Lacey remarks on the strong odour of the creature. He says he never killed one without being reminded of the Lion house of the London Zoo.[23]

Cactus Prickles. It will be noted that Chibiguazu, like Molly Cottontail, takes to the brier bush whenever in doubt or in danger. Said thorn bushes are ready to strike deep and often any unwise stranger rushing in, so that one is not greatly surprised to learn that even the low-gliding Ocelot does not always escape from the weapons of his undiscriminating friend.

A. Schott of the Mexican Boundary Survey killed a persecuted Ocelot in a thorny thicket where it had taken refuge from the Dogs, and adds: "In taking off the skin of this specimen, I found its inside all covered with opuntia prickles, which naturally barbed as they are had worked themselves in with the movements of the skin. The animal, however, did not seem to have suffered any by this otherwise dreaded annoyance, for all the prickles lodged themselves horizontally or in an oblique direction into the skin, so that the points would not reach the muscles and nerves. I observed subsequently the same circumstance on other animals, which accounts for the readiness with which they take to these bushes, unapproachable for men."[24]

Note: George K. Cherrie tells me that while collecting near Mato Grosso, Brazil, he heard a great noise among the jays. They were mobbing some creature on the ground. Through the underbrush, Cherrie at length got several glimpses of a big snake gliding by, and decided that it was a 20-foot boa. Then it crossed an opening, and stood revealed—not a snake, but an Ocelot!

[21] Texas, p. 167. [22] Nat. Hist. Para., p. 227. [23] Texas, p. 167. [24] Mamm. Mex. Bd., p. 10.

His Fatal Beauty

"Harmless and beautiful" is a fair summing up of the Ocelot, if we can forgive his few and scattered raids on the poultry house, We have so far depleted his own lawful stock of wild poultry that he is driven by starvation to levy on ours.

Innocent of any violent offence against the sacred person of man, or of any heavy damage to his herds, the Ocelot is yet retreating on that long, last sunset trail with all the rest. And here the immediate obvious cause seems to be the beauty of his ring-straked hide with its mottlings and frecklings of black and concatenating blots of brown. "The most beautiful velvety furred thing in our woods" is the appraisal of it by the hunters in the South. As much is given for an Ocelot as for a Jaguar or a Panther skin, says Schott,[25] and the trapper, frontiersman, or saddle-dandy of the sunny Rio Grande Plains did not consider himself dressed unless the silver of his gear was shining on a background of soft gray fur, the black-blotched velvet robe of an Ocelot.

Home Life

So far this compilation of many records gives nothing but the outside hostile view of a jealous rival hunter, or at best, the observations of a jailer. How much have we learned of the Ocelot's home life? for assuredly it has one, and if analogy count for aught, that home life must be nearly ideal. Among the wild things, anything supposed to make marriage a failure is not only grounds for divorce—it *is* divorce. Therefore, a wild male and female living together are happy, or they would not go on.

The following fragments are the only testimonies I find on this important matter.

The courteous and enthusiastic Azara tells us that in Paraguay, the Ocelots, or Chibiguazus, as he calls them, pair; and that "each pair lives in a separate district, as may be inferred from the male and female, and no more, being always caught on the same spot."[26]

Lacey supplies the following suggestive episode: "Once on the head of the Frio River in Nov. [1902] the hounds struck a hot trail and were just beginning to get off well together on it when a splendid male Ocelot sprang into a large cedar close to us. Thinking the hounds might be on a Bear trail, I shot the Cat at once, put him behind me on the saddle, and made after the hounds that were getting off at a good pace. They ran about 2 miles and

[25] Mamm. Mex. Bd., p. 10.

[26] Nat. Hist. Para., pp. 226–7.

then treed a female Ocelot in the bottom of a steep canyon. This also we shot, and I think the two were together when we started them, and that they often go in pairs."[27]

How easy it would be to rewrite that incident from the other point of view; to tell it as the Ocelots saw it: the devoted pair hunting side by side, happily living their lives together: then the sudden invasion and hideous uproar of the hounds, any one of them twice the size of an Ocelot, and the ruthless yelling hunter with his irresistible weapons, taking no risk whatever. The brave fighting male, trying in vain to cover her retreat to safety. The useless double tragedy; and worse than double, for it may be that in a far-off rocky den two little Ocelots waited for the mother's home coming, and wailed in vain, as hunger beset them, and louder wailed—for a time. Then their whimpers died away—died dead away.

It is easy to see it so, for every scrap of evidence, direct or collateral, that we can find, tells this: that written in that way, the story would be true.

References for Ocelot

1801—Natural History of Paraguay, by Azara. (See "References for Jaguar" for full title.)

1849—Quadrupeds of North America, by Audubon & Bachman, II, pp. 258–62.

1859—Mammals of Mexican Boundary, by S. F. Baird, pp. 8–10.

1905—Biological Survey of Texas, by Vernon Bailey, N. A. Fauna, No. 25, pp. 166–67.

1918—Wild Animals of North America, by E. W. Nelson, Washington, D. C., p. 416.

[27] Texas, p. 167.

LIFE IV—THE EYRA

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In the Moonlight

of a dull gray like a Deer in the "blue coat," thickly peppered everywhere with blackish, even on the belly, and darker on the feet.

In another gray ♂ from Chiriqui, Boqueron, Panama, the gray is much darker, becoming nearly clear black on the hind back, on the upper part of the tail, and on the legs.

Races

For the region north of Panama, but one race is recognized:

eyra Desmarest is the typical form from Paraguay, S. A.

cacomitli Berlandier, a pale Northern race. T. l. Matamoras, Tamaulipas, Mex.

Range, with Maps

Apparently it is found in one form or another, and generally distributed, in all the forest region, from Paraguay to the Rio Grande. Baird gives it as occurring, but rare, along the Rio Grande, near Matamoras, Mex.[2] J. A. Allen records the taking of a male at Rio Grande, Cameron County, Tex., Feb. 5, 1889.[3] Mearns describes an adult female taken at Brownsville, Tex.[4] Bailey records that in the U. S. Nat. Mus. are a dozen specimens from southern Texas and eastern Mexico.[5] Nelson says it is found in southern Texas associated with the Ocelot, and about Brownsville is probably more common than is generally supposed.[6]

Haunts

This elegant Weasel-cat is at home in the dense thorny thickets of the lower Rio Grande. Mesquite, cat-claws, granjeno, chaparral, acacia, ironwood, cactus—oh, how they all run thorny in that country!—are fearsome as barb-wire to man and the bigger beasts, but to the little Eyra they are the armed and friendly sentinels of his castle doorway, or the wire entanglements of his safest entrenchment.

Partly due to the fact that its home garden is impenetrable to man or Dog, and partly due to its elusive, furtive, and almost strictly nocturnal habits, the slim Eyra is supposed to be extremely rare. But F. B. Armstrong, the naturalist, of Brownsville, Tex., by persistent trapping, proved

[2] Mamm. Mex. Bd., p. 11.

[3] Bull. A. M. N. H., vol. III, no. 2, art. XX, June 30, 1891, p. 310.

[4] Proc. Nat. Mus., XXIV, 1902, p. 208.

[5] Texas, p. 167.

[6] W. A. N. A., p. 416.

in the lowlands of Guerrero on the Pacific coast of Mexico informed me that the Eyra in that region is fond of the vicinity of streams, and that it takes to the water and swims freely, crossing rivers whenever it desires. Its Otter-like form goes well with such habits, and further information may prove that it is commonly a water-frequenting animal."[11]

It will be noted that, except in this last, the Eyra closely resembles the Ocelot in habits as well as in its choice of food.

References for Eyra

1801—Natural History of Paraguay, by Azara. (See Jaguar references.)
1905—Biological Survey of Texas, by Vernon Bailey. N. A. Fauna, No. 25, pp. 167–69.
1918—Wild Animals of North America, by E. W. Nelson, Washington, pp. 413, 415, 416.

[11] W. A. N. A., p. 416.

LIFE V—THE LYNX

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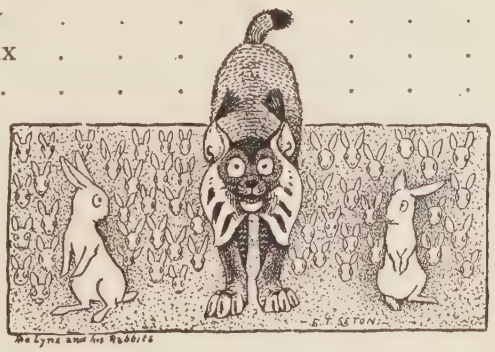

Lynx, Canada Lynx, Link, Bobcat, Gray Wild-cat, Gray-lynx Lucivee or Loup-cervier

Lynx canadensis Kerr

(L. *Lynx*, the ancient name of its European kinsman; *canadensis*, of Canada)

Lynx canadensis Kerr, 1792, Anim. King., I, pp. 32a, 157.
Type Locality—Eastern Canada

French Canadian, *Loup-cervier, Pichu, Lynx, Chat.*
Swedes of New Jersey, *Warglo* or *Wolf-lynx.*[1]
Ojibway, Cree, and Sauteaux, *Pee-shóo.*
Chipewyan, *Cheé-say.*
Yankton Sioux, *Ee-heé-mo.*
Ogallala Sioux, *Ig-mu-hó-ta.*

The genus *Lynx* (Kerr, 1792) comprises large Cats with very short tails (*i. e.*, less than one half the length of the body), long legs, large feet, usually with tufted ears, and with the following dentition:

$$\text{Inc. } \frac{3-3}{3-3}\text{; can. } \frac{1-1}{1-1}\text{; prem. } \frac{2-2}{2-2}\text{; mol. } \frac{1-1}{1-1} = 28$$

In youth there are 2 additional premolars above.

Size. To these generic characters the Canada Lynx adds thefollowing: Length, about 36 in. (915 mm.); tail, 4 in. (102 mm.); hind-foot, $9\frac{1}{2}$ in. (242 mm.).

Weight. An extremely lean male from Halifax, N. S., weighed 16 lbs.;[2] another from Petersburg Mountains, east of Troy, was 22 lbs.[3] The full-grown but lean female, whose feet appear in Plate XXX, weighed 13 lbs. A young female taken on Great Slave River weighed 15 lbs. A small but adult female which I examined at Calgary, Alberta, weighed 19 lbs. 11 oz. The large but starving male which I secured on the Barren-grounds, Aug. 5, 1907, weighed 22 lbs. One taken at Elkhorn, Man., by Dr. H. F. Gordon, on Sept. 27, 1905, weighed 27 lbs.

Manly Hardy, after handling hundreds, says:

[1] Rhoads, Mamm. Penn. & N. J., p. 139.

[2] Q. N. A., I, p. 138.

[3] As above.

PLATE XXV.—THE BIG CAT ON THE GROUND TURNED AND STARED AT ME WITH WILD BUT UNFIERCE EYES
From drawing by E. T. Seton

"One winter I had the accurate weight of 10, all large, and the heaviest weighed 25 lbs. I have weighed many others and have never seen one weigh more than my first; while kittens, in winter, weigh 10 to 12 lbs. As for some 30 years I was shipping furs to New York and later to London, I have handled many hundreds of skins, and think 30 lbs. the extreme weight of any Maine Lynx, although I have had skins from the north side of Baie Chaleur which were larger than any taken in Maine, and some might weigh 35 to 40 lbs."[4]

S. N. Rhoads accepts and records the following weights for Canada Lynx in Pennsylvania: "about 40 lbs.," "as high as 44 lbs," but these are exceptionally heavy.[5]

Colour—In summer: Grayish brown, much darker on the head and back (where the long hairs are black with occasional white tips), and shaded into dull whitish below; the ears behind are black, with a central spot of whitish; a spot at the corner of the mouth, the bars on the ruff, and the *whole end of the tail black;* a few dusky spots show on the inside of each limb.

In winter: The colour is much paler and grayer; at all times the tuft of hairs on the ears is long and black; the only black marks being those on the ruff, the ear-tufts and tail-tip.

When seen alive, it looks and behaves exactly like a huge gray kitten. Its tufted ears and short bobtail will distinguish it from its near relatives. It might be mistaken for the American Wild-cat or Bay-lynx (*Lynx rufus*), but its tail is very different and furnishes a sure guide; while the Canada Lynx has the tip of the tail wholly black above and below, and the rest of it grayish-white, the Bay-lynx has the tip black above and white below, and also has other broken bars on the upper part. (See Plate XXX.)

The feet also differ from those of the Bobcat. In the Lynx they look enormous, because they are so enlarged, especially in winter, by a vigorous growth of stiff, expanding hair. That is, they are developed into broad snowshoes, so that even though its weight be 30 or 40 lbs., it walks lightly over soft drifts where a Dog would flounder in utter helplessness.

Races

Three races of Canada Lynx are recognized:

canadensis Kerr, the typical form. T. l., Eastern Canada.

mollipilosus Stone, a browner race. T. l., Wainwright Inlet, Pt. Barrow, Alaska.

subsolanus Bangs, a darker race. T. l., Codroy, Newfoundland.

[4] Forest & Stream, June 29, 1907, p. 1010.

[5] Mamm. Penn. & N. J., pp. 137–38.

Genus **Lynx**

Plate XXVI. Lynx ♂. skull. Fort Smith, MacKenzie.

RANGE (See Map VI, p. 157)

The Canada Lynx is most happily circumspect in its choice of range, for it exactly follows the main area of the Canadian fauna, defining it perfectly except in the case of Canadian "islands" formed by uplands in regions too far south for climatic continuity; that is, cut off by uncongenial climatic and other conditions.

The map given is founded chiefly on records by Dr. J. Richardson, E. W. Nelson, O. Bangs, C. Hart Merriam, J. Fannin, W. H. Osgood, R. Bell, A. P. Low, R. MacFarlane, W. Stone, S. N. Rhoads, E. A. Preble, and E. T. Seton.

In Newfoundland according to J. G. Millais:[6] "Nearly all white men as well as the Indians say that there were no Lynxes in Newfoundland 15 years ago, and that they came to the island about this time from Labrador by means of the icebridge at the Straits of Belle Isle. It is also said that as the Lynx entered, so the Wolves departed. But I do not think that this view is correct, for as long ago as 1622 Captain Whitbourne noted the presence of 'Leopards' in the island and subsequent writers also mention the 'Wild-cats.'

"Doubtless they were very scarce until recent years, but now they are the most abundant of all the carnivora in the island, and do much damage to the game. They live to a large extent on the small varying Hare and grouse, seldom touching carrion until forced to do so by extreme hunger. Everywhere one sees their tracks on the sandy shores of the lakes, and at night and early morning I have often heard their screaming caterwaul. He is a sly, silent beast, is *A-bak-sigan*, the shadow, and his retiring habits hide him from the gaze of man.

"I have little doubt that the great increase in the number of Lynxes is due to the introduction of the small varying Hare which furnishes a good supply of food at all seasons."

Outram Bangs indorses the first paragraph of the above.[7] And Gower Rabbitts, secretary of the Game and Inland Fisheries Board of Newfoundland, writes me, Nov. 14, 1923:

"Lynx were reported about 38 years ago by Micmac Indians near Sandy Lake. About 40 years ago, some had been taken in the vicinity of Halls Bay, and the Indians of that time reported that Lynx had come to Newfoundland from Labrador in winter on the ice. The first taken on the Avalon Peninsula were reported about 34 years ago, and at that time it was currently reported that they had been on the northern Peninsula several

[6] Newfoundland and Its Untrodden Ways, 1907, p. 249.

[7] Land Mamm. Newfoundland, Mus. Comp. Zoöl., Cambridge, 1913. LIV. pp. 512–13.

years before, and it was thought then that they had crossed the Straits of Belle Isle on the ice in winter."

Home Range

The Lynx is generally believed to be a wide ranger. While the young are unable to travel, it would be impossible for the mother to go more than 4 or 5 miles from home, but in the autumn and winter there is reason for believing they will go fully ten times as far in search of good winter locations; that is, good hunting.

I shall never forget my first meeting with a Lynx. It was near Toronto, in December, 1875, although it was commonly believed that they were no longer found within 30 or 40 miles of that city.

Again in June, 1888, I found one at Springfield-on-the-Credit, Ont., as related later.

In *Rod and Gun* (Oct., 1911, p. 525) is a case of wandering detailed by Bertha Lean. Edward Wigg, a trapper at Jack's Lake, Peterborough County, Ont., had a trap carried off by a Lynx. A fortnight later his son, who lives at Cranberry Lake, 11 miles away, killed a Lynx there and on its foot found the missing trap.

Among the "Strange Instances" (given later) is one recorded by Major Allan Brooks, which seems to show that in this case a Lynx travelled some hundreds of miles from the Mackenzie region to Okanagan Lake, B. C.

Haunts

The Lynx is a creature of the primitive woods, the unbroken forest. In this it is unlike its cousin, the Bobcat, which avoids the dense shade and finds ideal conditions only in varied country, half in sun, half in shadow. The Lynx is so devoted to forest gloom that it has invariably receded as the pioneer cut down the woods.

Nothing but the dire necessity imposed by forest fires, flood, or starvation drives the Lynx into the open.

As exceptions to this rule are the following strange occurrences, apparently the result of a mere wanderlust, or else the search for better hunting. Under these circumstances, it is often found 3 or 4 miles out on the prairies. Sir Rodmond P. Roblin, K. C. M. G., ex-Premier of Manitoba, has supplied me with the record of a Lynx killed on his farm near Carman, Man., among some willows, 3 miles from timber and 10 from woodland of any extent. In the end of Oct., 1883, I met with a Lynx on the open prairie 20 miles west of Shellmouth, Man. In the fall of 1905, E. W. Darbey says 2 Lynxes were killed within the limits of the city of Winnipeg. On Aug.

Plate XXVII Lynx Studies.
by E. T. Seton

5, 1907, I found a large Lynx on the Barren-grounds, a couple of miles from the only timber, a little grove, and 20 miles from the forest.

Most of these far wanderings are the result of a search for food.

Interesting Records

E. A. Spears records the killing of a Lynx at Willseyville, 11 miles south of Ithaca, N. Y., by John Hallet, a farmer, who trapped and shot it after it had raided his chicken yard, Nov. 16, 1906. The specimen was identified by Doctor Wilder and A. A. Allen of Cornell University, in which museum it was deposited.

Length, nose to root of tail, 37 in.; tail, 5 in.; right hind-foot, $9\frac{3}{4}$ in.; weight, 26 lbs.; sex, female.[8]

Harry Chase records an unquestionable Canada Lynx killed in the Green Mountains of Pittsfield, Vt., by Gideon Hutt, Oct. 19, 1909. His description leaves no doubt as to the species. It weighed 32 lbs. Is said to be quite numerous in southern Vermont.[9]

On June 12, 1920, I spent the evening with a number of local hunters at Lake Mashipakong, N. J., and learned on good authority that 2 Lynxes (or "Link," as they called them) were taken in the near woods the previous winter.

In a later paragraph is given John Burroughs's note on a Lynx which he heard in the woods of Roxbury, N. Y., near "Slabsides," in mid-October, 1913.

Numbers and Alleged Migration

I met with but 3 or 4 Lynxes during as many years in Manitoba, so that in the poplar region about Carberry and westward they cannot be called abundant. In the sandhill tract between Carberry and the river, about 20 miles by 15, I doubt if there are ordinarily a dozen Lynxes resident. In the thickly wooded regions northward they are said to be much more plentiful, and in the Peace River country, during the great Rabbit year of 1904, the Lynxes so abounded that nearly every trapper and hunter in the country got from 20 to 50 that season.

That the Lynx population fluctuates greatly is well known to all trappers and fur-traders; but does the species migrate? J. K. McDonald of Winnipeg after 35 years of service in the fur country as a Hudson Bay trader, writes me:

"It is accepted as a matter beyond cavil by all Hudson Bay hunters,

[8] Forest & Stream, Aug. 10, 1907, p. 213.

[9] As above, Oct. 30, 1909, p. 697.

that the Hare, Lynx, and Marten do migrate, and the fluctuation in their numbers is not considered to be caused by epidemics save in the case of the Hare. Were it so with the Lynx, for instance, *their* bodies would surely be found, yet I have not heard of such a thing. It is always the case that when Lynx and Marten are plentiful, so are the Hares, and I am inclined to think that the former is the cause, at least to a large extent, as they are known to destroy the smaller mammals that prey on the Hares. Thus an influx in Lynxes causes such a decrease in other fur-bearing animals that the fur-traders look upon it as a disaster.

"These periodical waves of increase or decrease cover large tracts of country, and it might be found that where in one tract they were moving east, in another they were going west."

George Linklater and Miles Spencer, northern hunters of lifelong experience, reiterate the theory of migration.

The former tells me that at Green Lake, Ont., Lynxes were so plentiful during the winters from 1888 to 1890 that he took in 300 pelts each season at the Hudson Bay post. They then nearly all disappeared, and for 3 winters he took in only 30 to 35 pelts a season. At the same time they appeared in great numbers at Lake Temagaming, 200 miles away, where they had been very scarce, and for some years several hundred pelts were brought in each winter, instead of 20 or 30. At the time of this change he saw many Lynx tracks pointing eastward from Green Lake toward Lake Temagaming, and one day followed a band of half-a-dozen for many miles. They were not hunting, but travelling, and so close together that he could not be sure whether there were 5 or 6 of them. There was plenty of food at both places and no disease among the Lynxes, so it was impossible to say why they went; only he was quite certain that *they did go*.

A great deal of evidence of this sort could be presented. The trappers generally agree that the Lynx is migratory and that it follows the White-rabbit. The Rabbit, however, *does not migrate*, so we may understand this to mean that the Lynxes seek out the regions where the White-rabbit abounds. But an unexpected difficulty arises. If the Lynx population merely shifted, the aggregate fur returns of the entire country would not change, for the trappers cover the whole region every year; yet they do change.

Fluctuations of Numbers

After spending a lifetime as fur-trader, Roderick MacFarlane discusses the question as follows:

"This is one of the principal periodic fur-bearing animals which regularly increase and decrease in numbers about every decade. The experience

of observers, largely corroborated by the Company's London sales, is pretty much as follows: The catch of Lynxes for each, of (say) 3 seasons when they are least numerous, or rather comparatively scarce, fell sometimes as low as 4,000 or 5,000 skins as the entire output for the immense extent of territory covered by the Hudson's Bay Company's business operations. The fourth year would double these quantities, the fifth often more than doubled the fourth, the sixth doubled the fifth, while the seventh almost invariably witnessed the maximum trade of skins. The eighth would still be good, while the ninth and tenth would each exhibit a startling decline in the returns, which in quantity would closely correspond with the sixth and fifth years, respectively, in each decade."[10]

A clear idea of the wax and wane of the Lynx population is found in Alexander Henry's "Journal" on the Upper Red River in the years 1800 to 1808. The old fur-trader thus records the Lynx skins taken in the successive seasons at 20, 67, 194, 167, 38, 0, 4, and 4.[11]

In the section on the "Lynx and His Rabbits" I have given further details of the relationship between the two.

These, then, are the conclusions presented:

First, the Lynx population rises and falls in cycles of about 10 years, and when at its maximum may be as much as tenfold the minimum.

Second, there is no evidence that the decrease is due to epidemic disease.

Third, there is evidence of local migrations, but not of a kind to explain the great changes.

Fourth, after studying the problem on the ground, I feel no doubt that the decrease is due to starvation through failure of the Rabbits; and the story is grimly and silently told by frequent wasted bodies exposed in the woods when springtime melts the snow, as I myself witnessed on the upper waters of the Mackenzie in the summer of 1907.

Fur, Flesh, Etc.

The fur of the Lynx is a staple of Northwestern trade. The number annually exported by the Hudson's Bay Company has long oscillated between 4,000 and 75,000; 1896 was a high-water year, the export being 56,407; 1900 was the low ebb, the number having fallen to 4,473; since then the usual increase has continued, and 1905 must have been near high tide, for in the 1906 sales the Hudson's Bay Company had 58,791 skins. At the previous sale, Lampson's disposed of 21,521 skins, or, in round numbers, 80,000 skins were taken in 1905.

[10] Mamm. N. W. Terr., Proc. U. S. N. M., 1905, pp. 691–92.

[11] Journal, 1897, pp. 184, 198, 221, 245, 259, 281, 422, 440.

Poland's lists, however, show that the other American fur companies collect about 7,000 per annum, with little variation, and that, taking the whole continent, an average of about 30,000 Lynx are killed each year for their fur.[12]

At the London annual fur sales held at C. M. Lampson's in March, 1906, 7,737 Lynx skins were sold. The highest prices realized were 60 shillings ($14.40) each for 4 superb "blue" skins; 30 shillings to 35 shillings ($7.20 to $8.40) were more usual prices for first-class skins, from which they graded down to about 10 shillings ($2.40) for those of third class.

During the season of 1921–22 in Canada, 11,673 Lynx pelts were marketed, according to the Official Report from Ottawa. The average value was $20.38.

The hunters of the Biological Survey[13] report the killing of 30 Lynxes in the cattle country west of the 100th meridian, as against 3,432 Bobcats, showing their comparative numbers in the United States.

Its flesh is a regular article of diet in the Northwest. On the occasion when I tried it, I found it white and well-flavoured, but was debarred—by prejudice, I suppose—from enjoying my meal of Cat.

It is the easiest to catch and kill of any of our fur-bearers, and it is to be hoped that the cruel steel traps will soon be declared illegal for its capture. All justifiable destruction is amply achieved by Dogs, guns, and deadfalls.

Running

The Lynx is a creature of superb activity among matted branches and labyrinthine logs and underbrush. As it rambles through the snowy woods, it usually walks every log it comes to. Sometimes in the midst of a slow walk it will spring forward 12 or 15 feet, apparently without any object other than a wish to see how far it can jump. Yet it is surprisingly slow on the level ground.

The cowboys of New Mexico on their ponies could catch a Bay-lynx in the open within half a mile, even though it had a quarter-mile start. Not only will any common cur Dog overtake a Canada Lynx within a few hundred yards, but even a man who is speedy can run it down in open country, as attested by Alexander Henry. In speaking of Le Bœuf, a famous Indian hunter and runner on the Red River, he says:

"He came in to-day with a Loup-cervier that he had caught in the plains in a fair chase and killed with his small axe; he certainly is an extraor-

[12] Fur-bearing Animals, London, 1892.

[13] Rep., 1918, p. 3.

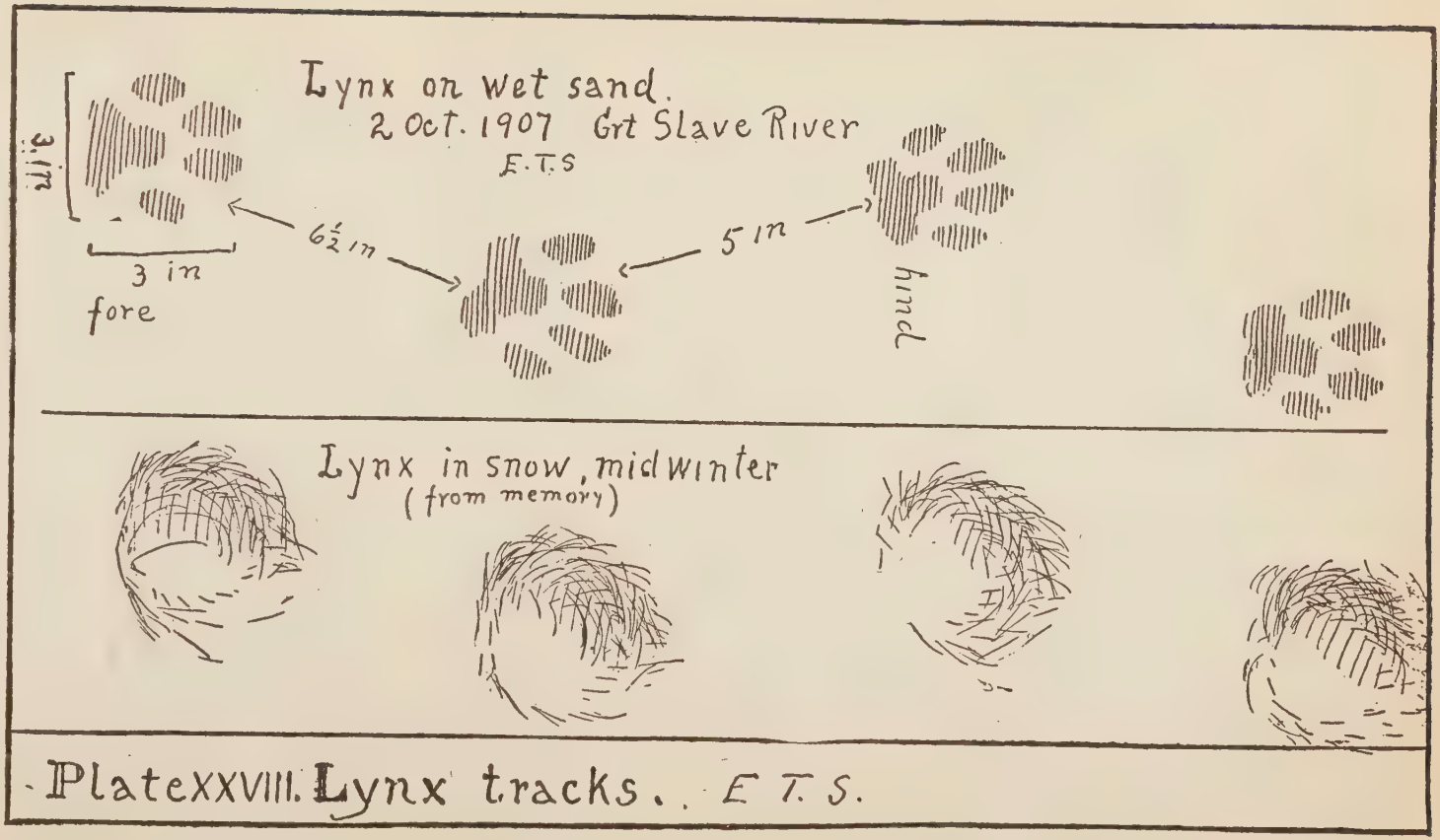

Plate XXVIII. Lynx tracks. E T. S.

PLATE XXIX.—YOUNG OF CANADA LYNX (LIFE SIZE)
From drawing on stone by E. T. Seton, made for C. Hart Merriam in 1886

dinary runner. He is a tall man, spare and lean, of a mild disposition, but wicked when provoked to anger."[14]

David MacPherson, the Athabaska River pilot, told me that in the summer of 1906 he ran down a Lynx on a prairie of Willow River (Mackenzie), near Providence. It had some 90 yards start; he ran it down in about a mile, then it turned to fight and he shot it.

Other instances have been recorded, and finally, as noted later, I was eyewitness of one of these exploits. Since the creature can be run down on hard ground, it is not surprising to learn that men on snowshoes commonly pursue it successfully. As long as it trots, it is safe, but when it gets alarmed and bounds, it sinks and becomes exhausted. It runs in a circle of about a mile and at last takes to a tree, where it is easily killed. At least one third are taken in this way; it requires half an hour to an hour; there must be soft snow, and the Lynx must be scared so he leaps; then he sinks. If not scared he glides along on his hairy snowshoes, refuses to tree, and escapes in thick woods, where the men cannot follow quickly.

Swimming

The uncatlike readiness of the Lynx to take to water is well known; that it is not wholly at home there is shown by the fact that if one awaits a Lynx at the landing he is making for, he will not turn aside in the least, but come right on to land, fight, and usually perish.

The garrulous and ever-entertaining Henry says, in his Red River Journal, April 22, 1804, p. 242:

"Caught 15 sturgeons and a Loup-cervier; how the latter came into the sturgeon net I cannot say. We saw his track on the beach until he came opposite the net, which completely crossed the river; he appeared to have then taken to the water, for what reason I cannot tell. However, he was found drowned, entangled in the net about 10 feet from shore."

Richardson, in his overland journey, 1848, relates that on June 26, at Buffalo Lake, "a Canada Lynx was seen swimming across a strait, where the distance from shore to shore exceeded a mile. We gave chase and killed it easily. This animal is often seen in the water"[15] and elsewhere he remarks: "It swims well and will cross the arm of a lake two miles wide."[16] I have several times known Lynxes to take to the water without being in any sense driven, and was surprised to find this member of the Cat tribe as good a swimmer as a Dog and far better than a Fox.

[14] Journal, p. 206.

[15] Arctic Search. Exped., 1851, I, p. 106.

[16] F. B. A., 1829, I, p. 101.

While paddling along Athabaska River, Oct. 1, 1907, about 6 P.M., we saw an animal trotting along a sandbar; it proved to be a Lynx. I landed to investigate. It took to the water and swam across to the main shore. In going, it swam about as fast as a Dog; its head and a little of its shoulders were out; it did not seem to go nearly as fast as a Caribou. Its footmarks in the mud did not track right; that is, they were out of register, the hind-foot did not fall in the print of the front-foot, etc. This may have a bearing on its snow-walking habit.

Mating

The species is generally believed to pair, but I have no evidence beyond the opinion of hunters.

The mating season is any time during the first half of March. My Ottawa guide, Ned Crête, of Deux Rivières, tells me that, in 1904, he saw 7 Lynxes together on March 15 or 20. It was the regular running season, and the year before, a similar group was seen at the same place.

There were 2 small and 5 big ones. They were caterwauling like Cats; it was this noise that called his attention to them. Two were fighting exactly like tomcats; the one down on his back had the better of it, being able to scratch with four feet instead of only two.

Murdo McKay of Fort Smith corroborates the account, as he also has seen these cat-like love-makings.

Manly Hardy thinks there is more threat than fight in these mating rows, and says: "I have heard two Lynx using very profane language and telling each other what a fight there was soon to be, but I have never known two to really fight. A half-breed friend told me that once, hearing two swearing at each other, he crept in and saw two Lynx, one of them a very large one, lying on their breasts a few feet apart, with their heads flattened out like domestic Cats when about to fight. A bullet interrupted the story the largest was telling, and that is the nearest I ever knew of two fighting. I have seen where Snowshoe Rabbits had fought like Cats, and have shot them with bites and scratches on their necks. If House-cats fight much, their ears show proof of it. But though I have examined hundreds of Lynx ears, and though Lynx skins are commonly brought in fur side out, so that any signs of fighting would be visible, I have never seen any signs of their having fought."[17]

The hunters generally believe that the Lynx is monogamous, and Miles Spencer gives it as the opinion of the Indians that the Lynx assists the female in rearing the young.[18] Linklater takes the same view and maintains

[17] Forest & Stream, June 29, 1907, p. 1011.

[18] Mammals of Hudson Bay, Low's Rep. Geol. Surv. Can., 1888, App. III, p. 76 J.

that though the male does not actually accompany the young when they follow the mother, he is always found at no great distance, both in summer and in winter. This same trapper believes that Lynxes travel in families the year round, except in the spring.

Young

The period of carrying is probably 60 to 65 days, since in the common Cat it is 55 to 56 days. This would bring the young into the world about the middle of June in Hudson Bay Territories, but in Pennsylvania, Rhoads says, they arrive in May.[19]

The mother prepares a comfortable nest for them in some hole or hollow log. Whether the father assists in this, I cannot learn. The young are, according to all accounts, from 1 to 3 or 4 in number, but Linklater tells me that he has found up to 6 in the female. This discrepancy I have come across many times, the average number of young in the brood being less than the number of embryos in the female. It may mean that some are still-born, a parallel case being the addled eggs in nests; or, if too many for their food supply, the weak ones die.

When born they are much like the kittens of the House-cat. In 1886 I made a drawing (Plate XXIX) of one to illustrate a paper by Dr. C. Hart Merriam. The specimen was secured by Montague Chamberlain, of St. John, N. B. He says:

"It was dropped on the 20th of March, 1883, when the mother had been in captivity about a month. She gave birth to 5 kittens, but this was the only one rescued from her unmotherly jaws. When the first was born, she at once prepared to clean it, and seemed fond of it. After a short time, however, it gave vent to a weak squeal, which caused her to eye it curiously for a moment, when another squeal was delivered. This settled the kitten's doom—it was at once devoured. The mother did not exhibit any tenderness toward the other 4, and the keeper made two unsuccessful efforts before he was able to get one away from her. This kitten lived two days, and then died from injuires received in its removal from the cage. Its 'mew' was something like that of a domestic kitten, but stronger and harsher; it was almost fierce and very penetrating. The general strength of the animal was greater than that of a domestic kitten. Two hours after birth it stood firmly on its feet and turned around in its box, but it did not show any inclination to fight when teased. The eyes were open at birth."[20]

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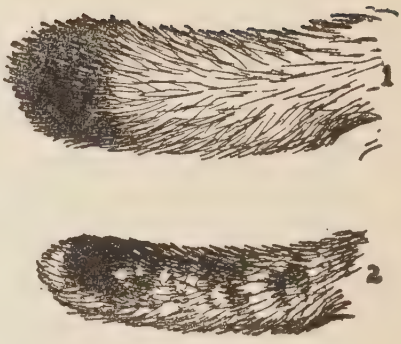
[19] Mamm. Penn. & N. J., p. 140.

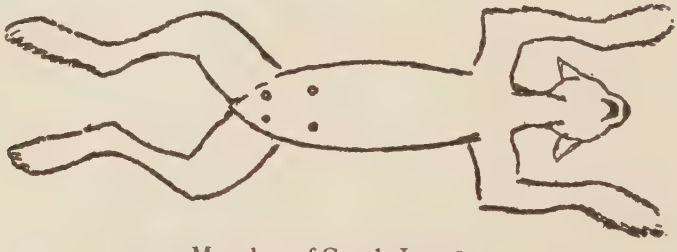
[20] Bull. Nat. Hist. Soc., New Brunswick, 1886, no. V, pp. 10–13.

Head of Canada Lynx ♀ in summer. (Half life size.)



Lynx Tails. (Half life size.)

1. Canada Lynx.
2. Bay-lynx.
(Both from Muskoka, Ont.)



Mastology of Canada Lynx ♀.

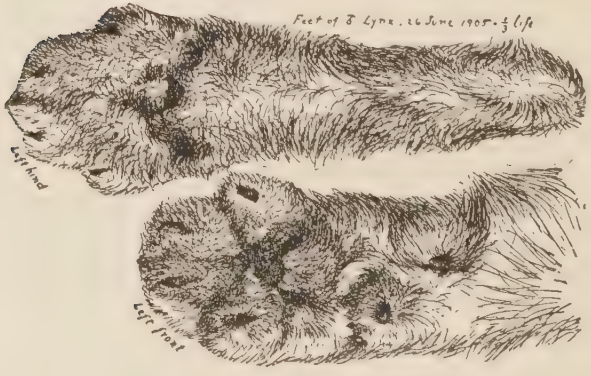


PLATE XXX—DETAILS OF CANADA LYNX

Miles Spencer states that they are born with closed eyes.[21]

Dr. Merriam adds in his description of the specimen figured:

"It is but a trifle larger than the young of the domestic Cat at birth, and may have been born a little prematurely, though the fact that its eyes were open argues against this supposition. I am unable to give many measurements of value, since I did not see the specimen till after it came from the taxidermist.

. . . . . .

"The ground colour of the body is light fawn, paler below, and inclining to buff on the sides. It is much obscured above by the stripes and rows of concatenating brown blotches, and below by small dark stripes. . . .

. . . . . .

"It is hardly necessary to call attention to the fact that this specimen is one of unusual interest, since its very decided markings, of which scarcely a trace remains in the adult animal, cast some light upon the genetic affinities of the genus to which it pertains. A critical study of these markings leads to the interesting conclusion that the genus *Lynx* was derived from the group of Cats of which the Ocelot (*Felis pardalis*) is the nearest living representative."

Age. In the Washington Zoo, a Canada Lynx, adult on arrival, lived comfortably for 11 years. Another adult, brought there May, 1916, is alive and well now (Nov., 1923). From these we may form some idea of the age to which the species attains.

Family Life

After the young Lynxes have been suckled for 2 or 3 months, the family —mother, kits, and probably father—set out on their travels. A glimpse of their life and adventures at this time is afforded by the following note from my Journal on Athabaska River in 1907: In July, 1906, near Fort McKay, St. Pierre McKay's wife was going around her Rabbit snares and saw an old Lynx staying about. Then she found in the snares a little one held by the neck and dead, and another alive held by the leg. What a family tragedy! Imagine the poor dumb mother, not able to help and not able to go away.

At this time (midsummer) the young are weaned and have for a month or more been eating solid food, but now they begin to learn hunting for themselves. The instinctive habit of the race, stimulated by hunger and the mother's example, is doubtless the prime motive power.

Although usually a shy creature, avoiding a meeting with man, the Lynx mother is very ready to fight for her family.

[21] Mammals of Hudson Bay, Low's Rep. Geol. Surv. Can., 1888, App. III, p. 76 J.

On one occasion, while out on a camera hunt in Colorado, I heard a buck stamping in a little dale and, slipping off my Horse, camera in hand, sneaked after the Deer. I found nothing but his tracks, and was peering across an open place when I caught sight of a large animal close to me on the right. On passing into the clear space it turned to look at me. It was a Lynx, but it seemed very small and its expression was one of innocent curiosity, entirely without menace. It paused at 30 feet. I hastened to adjust the camera, and as I did so a deep rumbling growl and a movement in a thicket close at hand made me jump. I turned around to see within 15 feet a Lynx three times as big as the first, and eyeing me savagely from behind some willows. My first thought was to wish for a gun, for I realized that the Lynx in the open was only a kitten; now I had to meet the mother. My second thought was that the old one would do me no harm if I faced her and did not molest the kitten. So I tried to get her photograph, but she disappeared, and when I looked round the little one also was gone. On this occasion I saw nothing of a second old one, or indeed of any other young ones, for that matter; but they may have been there, as the undergrowth was very thick. The date was Sept. 8th.

The family continues together all autumn. As proof of this, Linklater tells me that in Oct., 1904, he saw 4 Lynxes together hunting at Desbarats; probably they were mother and kits. In 1894, at Green Lake, Ont., he saw 5 together about Christmas; all seemed fully grown. Charles G. D. Roberts informs me that in New Brunswick a band of 5 or 6 Lynxes are sometimes seen in company. All these cases are, I believe, incidents of family life, and the rabbit-drives Nelson tells us of have a similar explanation.

The group may continue together until March comes, bringing with it that great disintegrator of the family band—the mating craze—which prompts the brother and sister to shun each other, and seek each one a helpmate for himself.

Diseases and Sanitation

The Rabbit is the most diseased of our mammals, and the Lynx feeding on the Rabbit should logically inherit the physical troubles of its victim, but I have seen no proof that it does.

As already noted, there is no evidence of epidemics among the wild Lynxes to account for their periodic disappearance.

Those who have the opportunity of conducting *post-mortem* examinations on the bodies of Lynxes can render good service by recording in full their condition, as it is probable that the Lynx may be temporary host of a parasite that finds its final and fatal development in the Rabbit.

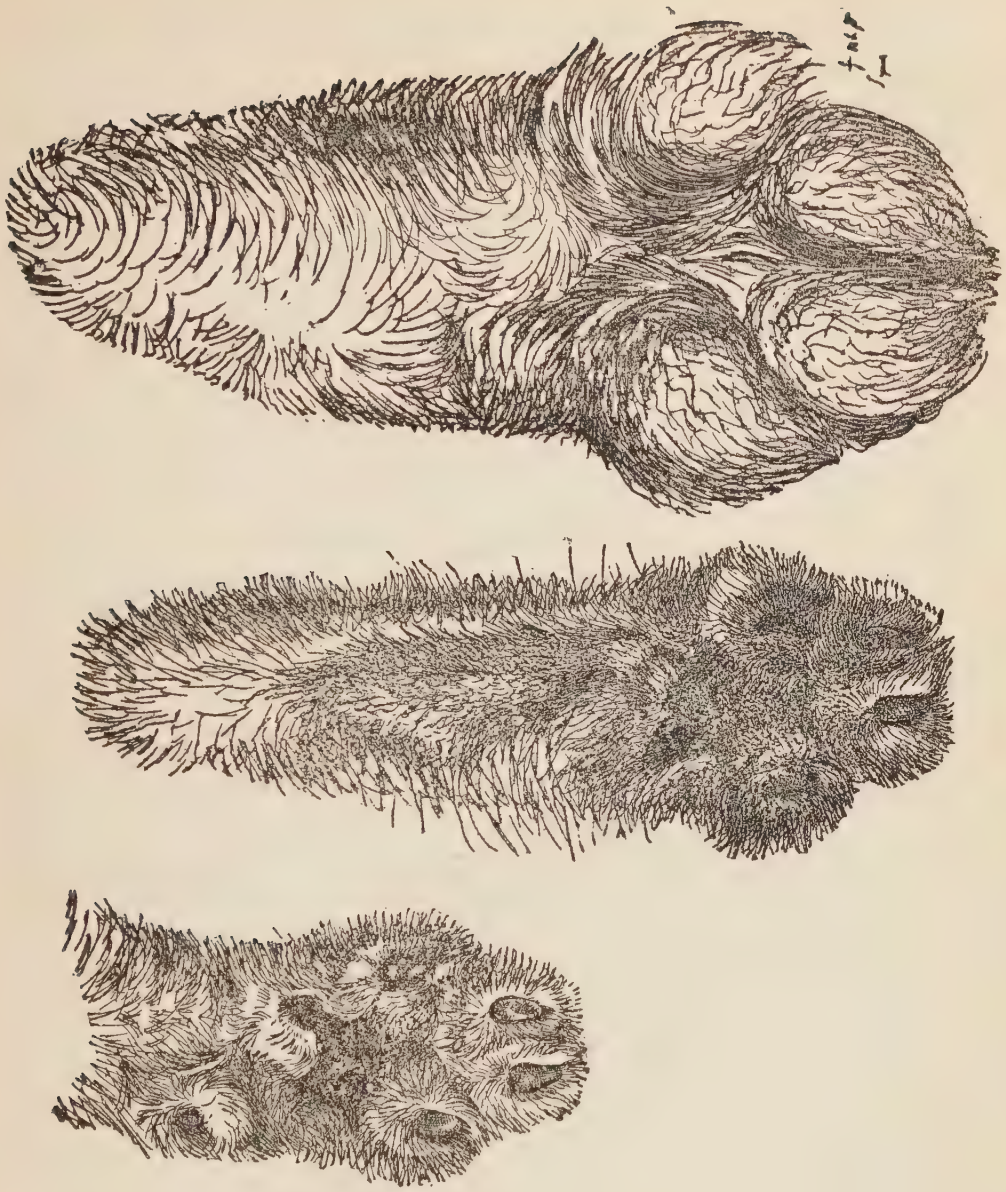


PLATE XXXI—FEET OF CANADA LYNX. (HALF LIFE SIZE)

Uppermost figure, right hind-foot of large male in winter.
Middle, right hind-foot of female in summer.
Lowest, right front-paw of same.

Manly Hardy, after a lifetime of experience among the Lynxes of Maine, writes:

"I am surprised to see that none of our nature writers make any mention of the only reason why Lynx should be feared by man. Lynx are infested by a long, slender, reddish flea peculiar to themselves, and, when carrying one on one's shoulder, the fleas soon think it for their health to change partners. While the change may be a benefit to the fleas, it is not pleasant for those carrying the Lynx."[22]

The specimen from which I made the drawing of feet (Plate XXXI) died of sunstroke in the New York Zoölogical Park.

Like all Cats, the Lynx is scrupulously clean. Menagerie specimens usually set apart one corner of the cage for the cesspool department, and wild Lynxes are said to bury their dung like Cats, but of this I have no conclusive evidence.

Strange Instances

The Wolverine is notorious for its destruction of traps set for other game. Both Wolf and Coyote, as well as Bear and Fisher have been charged with this mischievous propensity, but Manly Hardy, ever to the fore with new light on the wild things, says:

"Lynx rarely trouble log-traps set for Sable or Fisher, but in 1858, while hunting on the head of Little Tobique, in New Brunswick, on the four-mile portage between Spring Lake of Tobique and the upper Nepisiquit, one morning I found the boxing pulled out of several traps. As there was no snow I had no tracks to help tell what had done it, but I found the marks of sharp teeth in the wood, and several white hairs 3 or 4 inches long stuck in the fir balsam of the chips he had pulled out. I was puzzled to tell what animal had any such long white hairs and carefully saved several of them in my wallet to show to my partner. In coming back near night, I found a large Lynx in a Bear trap, and by comparing found that the white hairs came from the muffle under his throat. Fisher and Bear often tear down wooden traps, and I have had a Wolf go out on a dam to get to an island and pull the boxing out of several traps though not touching the bait, but this is the only case in which I knew a Lynx to do it. In no case did this one touch the bait after getting where he could see it."[23]

A very strange affair is thus given by Major Allan Brooks. In the winter of 1908–09, he trapped a large Lynx near Okanagan Lake, B. C., and having killed him, proceeded to remove the beautiful robe.

[22] Forest & Stream, June 29, 1907, p. 1011.

[23] As above, July 27, 1907, p. 131.

"On coming to the head," he says, "I found the skin would not draw over the skull, so, as it was getting late, I left the head to be skinned when I reached camp.

"There a surprise awaited me, as I found a tight-drawn rawhide noose around his neck just back of the head. This was so tight that it seemed it would have been impossible for the animal to swallow, yet it had not impaired his condition nor injured his fur. This noose was the regular two-ply twisted snare used by the Northern Indians, but never to my knowledge used by the Indians anywhere in the region around Okanagan. I showed it to several and they had no knowledge of its use, so this Lynx must have travelled a long distance."[24]

Sociability and Tameness

So far as known, the only approaches to sociability in this animal are the bands of 4 or 5 that are seen together in autumn and winter, and it is the opinion of most hunters that these are the family of the year, still with the mother and occasionally accompanied by the father; so that its sociability is much the same as that of the Wolf.

George Linklater assures me that he has often seen in the snow signs of Lynxes gathered together to chase each other and play at a time when sex instincts were out of the question. But what the nature of the game was, I have failed to learn. E. W. Nelson says: "The fur-traders and Indians of the Upper Yukon claim that the Lynxes sometimes unite in parties of 5 or 6 and make Rabbit drives on the small islands in the Yukon. They claim to have heard the Lynxes utter a sharp whistling noise, and to have found their tracks in the snow where the line had swept the island, until each secured its prey, near the farther end."[25]

Similar testimony is offered by Manly Hardy, who says:

"While usually the Lynx travels alone, or at most with 2 or 3, I have known of two cases where there was quite a large drove of them. In one instance, some men saw a drove near a camp, mostly on trees. On getting a gun, 7 were killed and they thought that more escaped. I saw the skins. All were small. . . . In another case two men were crossing a piece of woods after dark, having a gun and a Dog with them. The Dog treed something, and, on lighting a torch, a large Lynx was shot, and as fast as one was shot, another was treed, which was repeated until 11 were killed. In this case, they were all large old Lynx."[26]

[24] Forest & Stream, Mar. 13, 1909, p. 412.

[25] Alaska, p. 235.

[26] Forest & Stream, June 29, 1907, p. 1011.

Interesting light on the friendly character of the Lynx is afforded by the fact that, when I was in the Far North (1907), Jamie Spencer of the Hudson's Bay Co.'s Fort at Lac la Biche had a tame Lynx which was allowed to run loose, yet even if off in the woods, it always came at call of its name. I did not see it but heard details from my Indian guide, Robillard, who often saw it.

Curious Partnerships

An interesting kind of commensalism has been noted in the Lynx life. Linklater tells me that he has seen a horned owl and a Lynx together working a Rabbit woods, the owl hovering around the outskirts to pick up the Rabbits as the Lynx routed them out. Of course, in this case we must suppose that the owl was a parasite that the Lynx was helping unwittingly. But the same sort of thing is seen with various hawks; nor do they follow only the four-legged hunters, but will impudently try to utilize the terror spread by the gunner, and sometimes, forgetting themselves, come within range, to be added to the common bag.

Food: The Lynx and His Rabbits

It is noteworthy that most of our carnivora live chiefly on prey smaller than themselves. The Fox preys on Mice, the Marten on Squirrels, the Badger on Gophers, the Lynx finds its chief support in the White-rabbit.

The importance of the Rabbit to the Lynx is so great that I give the subject a chapter to itself.

Of all the Northern creatures, none are more dependent on the Rabbits than is the Canada Lynx. It lives on Rabbits, follows the Rabbits, thinks Rabbits, tastes like Rabbits, increases with them, and on their failure dies of starvation in the unrabbited woods.

It must have been a Hibernian familiar with the North who said: "A Lynx is nothing but an animated Rabbit anyway."

The Rabbits of the Mackenzie River Valley reached their flood height in the winter of 1903–04. That season, it seems, they actually reached billions.

Late the same winter, the plague appeared, but did not take them at one final swoop. Next winter they were still numerous, but in 1907 there seemed not one Rabbit left alive in the country. All that summer we sought for them and inquired for them. We saw signs of millions in the season gone by; everywhere were acres of saplings barked at the snow-line; the floor of the woods, in all parts visited, was pebbled over with pellets; but *we saw not one Woodrabbit* and heard only a vague report of 3 that an Indian claimed he had seen in a remote part of the region late in the fall.

Then, since the Lynx is the logical apex of a pyramid of Rabbits, it naturally goes down when the Rabbits are removed.

These bobtailed Cats in 1907 were actually starving and ready to enter any kind of a trap or snare that carried a bait. The slaughter of Lynxes in its relation to the Rabbit supply is shown by the Hudson's Bay Company fur returns as follows:

In 1900, number of skins taken	4,473
" 1901, " " " "	5,781
" 1902, " " " "	9,117
" 1903, " " " "	19,267
" 1904, " " " "	36,116
" 1905, " " " "	58,850
" 1906, " " " "	61,388
" 1907, " " " "	36,201
" 1908, " " " "	9,664

Remembering, then, that the last of the Rabbits were wiped out in the winter of 1906–07, the predicament of the Lynxes will be understood.

During that 7 months' journey I met with a dozen Lynxes that were dying of starvation—mere walking skeletons—and in the silent woods found a dozen shrivelled corpses, muffled in the towsled wool that once had been the superb winter coat of a Lynx. There were thousands of starving Lynxes roaming about the country, combing the woods for any last vestige of animal food. Every item of evidence helped to emphasize the dire story of the plague and of the famine that came after.

Some of my 1907 notes are as follows: May 18th, Athabaska River, on roof of a trapper's hut, found the bodies of 30 Lynxes, kept, no doubt, as food for his Dogs, or even for himself in an emergency.

May 19th, Pelican Portage, Athabaska River, young Lynx shot to-day, female, very thin, weighed only 12½ pounds.; should have weighed 25. In its stomach, nothing but the tail of a whitefooted Mouse. Liver somewhat diseased. In its bowels, at least one tapeworm.

June 3rd, Athabaska River, we left this camp of tall timber. As we floated down, we sighted a Lynx on the bank looking contemplatively into the flood. One of the police boys seized a gun and with a charge of No. 6. killed the Lynx. Poor thing, it was in a starving condition, as indeed are most meat-eaters this year in the North. Though a fully grown young male, it weighed but 15 pounds. In its stomach was part of a sparrow (White-throat?) and a piece of rawhide an inch wide and 4 feet long, evidently a portion of a dog-harness picked up somewhere along the river. I wonder what he did with the bells.

June 6th, Upper Slave River, adult female Lynx killed, weighed 15 pounds; stomach contained a Red-squirrel, a Chipmunk, and a Boglemming (*Synaptomys borealis*).

June 18th, Fort Smith, young male Lynx, weight 13 pounds, shot by Preble on Smith Landing; had in its stomach a Chipmunk (*borealis*) and 4 small young of the same, apparently a week old, as they were about 2 inches long including the tail. They were naked and rudimentary, but evidently born, as the navel was cleaned off. Only one was crushed. In the stomach were also a score of pinworms. How did it get the Chipmunk family without digging them out? for the Lynx never burrows.

June 26th, on Salt Mountain, west of Fort Smith, found the dried-up body of a Lynx firmly held in a Bear trap.

June 29th, Fort Smith, one of the Jarvis bear-cub skins was destroyed by the Dogs, except a dried-up paw, which he threw out yesterday. This

morning one of the men shot a starving Lynx in camp. Its stomach contained nothing but the Bear paw thrown out last night.

July 27th, Great Slave Lake, found a big gaunt Lynx feeding on the body of another that seemed to have died of starvation.

These are a few of my observations; they reflect the general condition—all were starving. Not one of them had any Rabbit in its stomach; not one had a bellyful; none of the females were bearing young this year.

His Other Foods

In addition to Rabbits, the Lynx preys on various kinds of grouse—is, in fact, the chief enemy of the Canadian grouse or spruce partridge.

It is a curious fact, as I have often witnessed, that the spruce partridge will allow a man to walk within 10 feet and *noose* a number out of a covey, but the moment a Dog or anything suggesting a Lynx appears in the distance, the whole family take flight in alarm. This may be accepted as evidence that the Lynx and perhaps the Fox have for long been the only important enemies of this grouse.

The diet of this animal is thus detailed by Audubon and Bachman: "The food of the Canada Lynx consists of several species of grouse and other birds, the Northern Hare, Gray-rabbit, Chipping-squirrel, and other quadrupeds. It has been mentioned to us that in the territories to the north of the Gulf of St. Lawrence they destroy the Arctic Fox, and make great havoc among the Lemmings (*Georychus*). Hearne informs us[27] that in Hudson Bay they 'seldom leave a place which is frequented by Rabbits till they have killed nearly all of them.' They are said to pounce on the wild goose at its breeding places, and to destroy many Marmots and Spermophiles by lying in wait for them at their burrows."[28]

Manly Hardy relates that his partner was once crossing the foot of a frozen lake as near the open outlet as he dared go when he came on the dead body of a Mink. There was a slight snow, so it was easy to read the story. The Lynx and the Mink had met, by accident no doubt. The Mink had faced the Lynx, which at once killed it by a bite through the neck, dropped it, and passed on.[29]

A. T. Bickford says: "It is hard to say which would be likely to be the aggressor in a conflict between an eagle and a Lynx, but I have seen unmistakable evidence in the snow that these two do engage in mortal combat. By the Lynx tracks and the eagle feathers it was easy to read that in this

[27] Journey, p. 366.

[28] Q. N. A., I, p. 141.

[29] Forest & Stream, July 27, 1907, p. 131.

case the Lynx had come off victorious and had capped the climax by making a meal off his late antagonist."[30]

We shall probably find in its food list every living creature that it can overcome, which means all smaller than itself, not excluding snakes, frogs, and insects. There are probably but two lesser fellow woodsmen that the Lynx lets alone; these are the Skunk and the Porcupine. Starvation, however, may overcome its fear of these, as is shown by Audubon and Bachman: "At a public house in Canada, we were shown the skin of one of these Lynxes, the animal having been found quite helpless and nearly dead in the woods. It appears that, leaping on to a Porcupine, it had caught a Tartar, as its head was greatly inflamed and it was nearly blind. Its mouth was full of the sharp quills of that well-defended animal, which would in a day or two have occasioned its death."[31]

There is one food supply that, so far as I can learn, is never utilized by the Lynx. It never eats fruit, nor, indeed, ekes out in times of stress with any contribution of the vegetable world. When the Rabbits and other game fail, though the woods abound in huckleberries, cranberries, and a dozen other luscious fruits, the Lynx knows them not. It must rustle for flesh meat or die of starvation. In this it is like the Cougar and some others of the Cats.

Storage

Canadian hunters and trappers generally credit the Lynx with a well-developed storage habit. When it secures more food than it needs for the present, it carefully hides it in the earth or in the snow for less bounteous times. One case has already been cited.

How, then, are we to reconcile this provident habit with the direst of famine? The only answer I know is, first, one cannot store food when there is none; second, the famine was so long and dread that all foods, running or stored, were used up, and the nation of Lynx was facing the final penalty of failure to find food.

Death on Foxes

Most persons are surprised to learn that in the thickly wooded country the Lynx is a deadly enemy of the Fox, presenting a new aspect of the ancient feud between Cat and Dog.

One of my guides in the Kippewa region of Quebec (Archie Miller) tells

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[30] Recreation, May, 1902, p. 337.

[31] Q. N. A., I, p. 141.

Plate XXXII.
Lynx Studies from Life
by E. T. Seton.
1905-1907

me that in Jan., 1904, as he crossed Askoe Lake near Kippewa, he saw a Lynx and a Fox some 80 yards off, fighting on the snow. He watched them for about 15 minutes. The Fox was trying to get away, but the deep, soft snow was against it, and finally it was overtaken and killed by the Lynx. When Miller came up, the victor ran off into the woods. In the fight, an acre of snow was trampled all over; they must have been at it for an hour. The tracks showed that they began the battle in a woods near by, where there were many Rabbits. The Fox's neck was torn open and its heart pierced in two places, apparently by the claws of its adversary. It was a prime Cross-fox and brought five dollars.

Similarly, Linklater tells me that once when carrying the mails down from Montreal River, Ont., in Jan., 1880, he had halted for noon at the edge of a small lake and saw on the ice, a mile or more away, two animals fighting, one either a Fox or a Fisher, the other a Lynx.

After eating his dinner and resting an hour, he travelled on to the place and found the combatants to be a Cross-fox and a Lynx. They had had a long and desperate encounter, but the Fox, as usual, had succumbed to his foe's superior powers, and had been torn into pieces. The head and tail were lying on the ice, but the body had been carried off and buried under snow in the distant woods, where the traveller found it. The tracks showed that the Lynx had attacked the Fox in the woods and chased him round and round on the Rabbit trails for perhaps an hour before driving him on to the ice, where the killing took place. There were plenty of Rabbits, so that hunger was not the excuse. The Fox was at a disadvantage, as the snow was 3 feet deep and very soft. The Lynx went over the surface on his snowshoes, the Fox ploughed in deep, and the harder he leaped the deeper he sank.

John Bellecourt of Fort Smith related that in the January of 1907, at a place 40 miles south of Smith Landing, he saw in the snow where a Lynx had run down and devoured a Fox.

J. K. McDonald of Winnipeg writes me: "I have known of bodies of even full-grown Foxes being found dead, but uneaten, such having been killed by the Lynx."

From various parts of the great wild North I get the same information. The Lynx is the deadly foe of the Fox and habitually kills it when there is soft snow and scarcity of easier prey. Its broad feet are snowshoes, enabling it to trot over the surface on Reynard's trail. The latter easily runs away at first, but sinking deeply at each bound, its great speed is done in 5 or 6 miles. The Lynx keeps on the same steady trot and finally claims the victim.

Most of the trappers tell of the destruction of Foxes by Lynxes and Fishers.

As soon as these two are trapped out, Foxes increase, but are everywhere scarce in the thick woods.

The latter, however, is not always master of the situation, as proved by the following incident in Nelson's "Alaska, ' p. 235: "Mr. [L. N.] McQuesten, a fur-trader living at Fort Yukon, witnessed one winter day a combat between a Lynx and a Red-fox, which he described to me as follows: 'The Lynx sprang upon the Fox, in comparatively open ground, evidently trying to capture it for food. The Fox instantly made fight, and for a few moments the fur flew right and left. Then a short pause followed and the fight was renewed. A second pause ensued, and after the two had glared at one another for a few moments, they slowly withdrew in opposite directions, the hair on each bristling defiance, but each apparently satisfied to close accounts.' This Lynx was probably weakened by hunger, for a vigorous Lynx is certainly more than a match for a Fox."

In this case, I suspect further that there was very little snow to give the Lynx his usual advantage.

A contribution by Thomas Anderson, Hudson's Bay Company Factor at Fort Smith, runs thus:

In late March, 1907, an Indian named Amil killed a Caribou near Fort Rae. During his absence a Lynx came along and gorged itself with the meat, then lay down alongside to sleep. A Silver-fox came next; but the Lynx sprang on and killed the Fox. When Amil came back he found the Fox and got a large sum for the skin; one shoulder was torn. He did not see the Lynx but saw the tracks.

The same old-timer is authority for a case in which the tables were turned.

A Desert Indian on the headwaters of the Gatineau went out in the early spring looking for Beaver. At a well-known pond he saw a Lynx crouching on a log, watching the Beaver hole in the ice. The Indian waited. At length a Beaver came up cautiously and crawled out to a near bunch of willows; the Lynx sprang, but the Beaver was well under way and dived into the hole with the Lynx hanging to him. After a time the Indian took a crotched pole and fished about under the ice; at last he found something soft and got it out; it was the Lynx, drowned.

In my early days about Lindsay, Ont., I several times heard of farmers losing lambs or even small Pigs through the attacks of Lynxes; and fawns were believed to be commonly their prey. But the hunters were divided as to whether a Lynx would attack any creature so large as a full-grown Deer.

Deer-killer

One of our best naturalists writes: "We have heard one or two accounts of the Canada Lynx having killed a Deer; we are somewhat sceptical in regard to this being a general habit of the species, although when pressed by hunger, which renders all creatures desperate at times, it may occasionally venture to attack a large animal."[32]

George Linklater claims that he has conclusive evidence in point. At Green Lake, Algoma (H. B. Post), he once found the remains of a Deer on the ice with no tracks but those of one Lynx about it. The Deer was a two-year-old. He is satisfied that it was killed by the Lynx.

Manly Hardy says positively that both Lynx and Bobcat will kill Deer as well as Sheep, and adds that the hunt is a crawl-up and spring, exactly, indeed, as with the Cougar. He says in detail:

"A friend of mine, while following the track of a buck on the first snow, came to a place where he had crossed a part of an open bog to a spruce island. Knowing the habit of Deer to seek such places to lie down, he felt quite sure of his buck till he came to the track of a Lynx which had come in ahead of him and taken the Deer track. Wishing to see if the Lynx had killed the Deer, he followed and, when near the island, saw the Lynx peering out at him from under a low bush. As he thought his chance for getting the Deer was gone, he shot the Lynx, and on following the tracks for a few rods, found the Deer dead. The Lynx had crept to him while lying down, and jumping on his neck, held him down until he killed him by biting his throat. In several other cases where I have known Lynx to kill Deer, they have crept to them and bitten their throats."[33]

J. B. Monroe, of Montana, says:

"On the South Fork of the Flathead I saw where one [Lynx] had killed 4 Deer in the space of a couple of weeks. The snow was deep and I was following his tracks, and came across the carcasses."[34]

Still stronger evidence is offered by L. D. Gilmore, who hunted over one of my old stamping grounds in the Rockies. He writes:

"Early one morning November last [1901] Frank and Charley Allen and A. W. Muckey, all of Dotsero, Colorado, while riding along the old Defiance trail below Dotsero, observed in the snow evidences of a fierce struggle which had continued for some distance down the hillside. Muckey dismounted, followed the course taken by the combatants, and soon came to

[32] Q. N. A., I, p. 141.

[33] Forest & Stream, June 29, 1907, p. 1011.

[34] As above, Aug. 17, 1907, p. 253.

Meat & drink
Plate XXXIII. Lynx - his meat & drink.

the still warm carcass of a Deer. Leading away from the body were fresh tracks of a Lynx. The beast itself, its repast thus rudely interrupted, was seen, as it sped away, by the Allens, who were still sitting on their Horses on the trail above.

"A day or two later, being in the vicinity and wishing to satisfy myself with regard to a case, which, if true, I believed would be of interest to many, I found the carcass and carefully examined it. Contrary to my expectations there were no marks on the body to indicate that the Deer had been wounded previous to its encounter with the Lynx. Nor is that supposition probable, for no blood could be found in the bed where the Deer had been lying nor along its trail. The only wounds on the body were those made by the Lynx. . . .

"Tracks in the snow told the whole story plainly. The fawn, for such it was, had been lying under a small cedar. Alarmed, presumably by the approach of the horsemen, it had risen and started up the trail. It had gone but a short distance when it came face to face with the Lynx who was coming down the trail. The Deer sprang aside, but too late; the Lynx sprang as well and alighted on the Deer's back. Then began the unequal struggle.

"Either the force of the Lynx's leap knocked the Deer down, owing to the steep declivity, or else it threw itself down to get rid of the brute on its back. Whichever the case, it never rose again; down the hill they went, rolling over and over. But a little way and blood began to stain the snow; a little farther and the snow was crimson; another step, and the track ended in a pool."[35]

This, however, was a fawn, and the evidence was largely circumstantial. It was reserved for young Charles Pokagon, son of Chief Simon Pokagon, of Michigan, to supply the testimony of eyewitness to the successful attack on a full-grown Deer by a Lynx. His story is given thus:

"Several years ago, in January, my father, the late Chief Pokagon, and I were crossing Black River, in this State, with a yoke of Oxen and a sled. We were startled by a strange bleating on shore to the right of us, and at the same time we saw a whirling about in the brush, which at first appeared like a small whirlwind, but in a moment we saw *Suc-se* (a Deer) struggling to free herself from *Bi-su* (a Lynx). Father grabbed from the sled a stake which he used as a war club, and tried to beat the brute off the Deer. *Bi-su* escaped the war club and skulked away out of sight. Our sympathy was awakened for poor *Suc-se* that lay prostrate on the ground, and we raised her up. She was a large doe, but to our surprise, she was dead. We skinned

[35] Recreation, May, 1902, p. 338.

PLATE XXXIV.—LYNX KILLING FOX

her and found that her throat was severed, and neck mutilated in a frightful manner. We took the skin and saddles home with us, after staking down the remains of the animal, beside which we carefully set a large Bear trap that we happened to have with us.

"The following morning we went back to the battleground. We found *Bi-su* caught, etc."[36]

Reference to the "White Sheep Life" will show that in Alaska the ewes, at least, are sometimes killed by Lynxes. The details are set forth in *Forest & Stream*, March 27, 1909, p. 491. The article describes the killing of 2 nearly adult Alaskan Sheep by Lynxes. It is written by Dr. C. Hart Merriam and Charles Sheldon.

In that Far North where the Lynx grows big and strong and very hungry, where the winter famine is a frightful urge—an urge strong enough to call forth heroic deeds from our mild-eyed simpleton—one is not greatly surprised to learn that the Lynx attacks even the Caribou.

Samuel Hearne states that he once saw a Lynx take possession of a Caribou that an Indian had just slain and "suffered itself to be killed before it would relinquish the prize."[37]

Owen O'Sullivan of the Geological Survey tells me (1910) that he has reliable information of one Lynx killing a bull Caribou in spring on crust. It was seen by Adelard Laveaux, halfway between Quebec and Lake St. John, about 1903.

Bellalise, my Indian guide on Athabaska River (1907), ascribes a similar notable achievement to this animal.

One winter, he says, when hunting Caribou near Fond du Lac, with an Indian named Tenahoo (human tooth), they descried a Lynx sneaking along after some Caribou. The Caribou saw the Lynx coming but had not sense enough to run away. It sprang on the neck of a young buck; the buck bounded away with the Lynx riding, but soon fell dead. The hunters came up; the Lynx ran off. There was little blood and no large wound on the buck; probably its neck was broken. The Indian said the Lynx always kills with its paw, and commonly kills Deer. The river pilot, David MacPherson, corroborates this.

In New Brunswick, according to Charles G. D. Roberts, a band of Lynxes do not hesitate to attack even a Caribou; and George Linklater relates a similar case that he heard of from an Indian whom he considered quite reliable. It was at a point 35 miles north of Sudbury, Ont. The hunter found the place with all the marks in tree and in snow, showing that

[36] Recreation, Sept., 1902, p. 220.

[37] Journey, 1795, p. 372.

the Lynx had been in a tree by the runway and had dropped on a passing Caribou, but the Caribou, by dashing into the thickets, had managed to get rid of its enemy.

From these records we may believe that the Lynx will, if hard pressed, attack Deer and even Caribou, but these are not its usual prey, nor does it care to assail them except when able to do so in force.

However, we have not yet exhausted the list of heroic possibilities in the Lynx when devil-driven by the pinch of an empty belly combined with abundant strength and vigour, for Charles Harding, the Hudson's Bay Company Factor at Fort Resolution, 1907, says the Indians tell him, and he believes it true, that Lynx will kill Moose when they are hard pressed by hunger. They leap on the Moose's back and tear till it falls. David MacPherson also told me that it was well known that on rare occasions Lynx would kill Moose.

A Respecter of Persons

There is one length to which even the urge of hunger and the pride of strength have never yet driven the Lynx—and let this sound a note of comfort to those whose blood is frozen by the demon yells at night about the camp, and whose hair has sat up when, utterly unarmed, they have suddenly found themselves gazing at short range, point-blank into the owl eyes of some Lynx, who, still as a statue, is staring at them from some near log—the Lynx has never yet been known to attack man openly, knowingly, voluntarily.

It may sneak along the hunter's trail after dark, and close behind him, but it seems to be actuated by curiosity more than anything else, and having come near enough to inspect or wind him, is most likely to glide away in search of its proper prey.

I have several times been followed in this way, but usually did not know it till afterward, when I happened to come back again to my old track in the snow.

A hunter told me that he once secured a fine specimen through knowledge of this habit.

Chancing on his track again within a few minutes, he saw the great padmarks of a Lynx evidently trotting behind him. He crossed an open space into some brush and there sat down to watch. Within 5 minutes, the Lynx came running the trail like a hound and, when within 20 yards, was easily bowled over with a charge of heavy shot.

Several of my companions about Carberry have met with Lynxes among the Sandhills. A dozen times I encountered them in the woods during

my journey in the Far North. In most cases the creature walked away, retiring with great dignity, or, at most, it uttered a deep, defiant growl.

Manly Hardy, after half a century of Lynx experiences, says: "The only case I ever heard of where either a Lynx or a Wild-cat ever really attacked a man, was one my father told me of, when a man wearing a gray coat was following a Deer in a snowstorm through a thicket. The Lynx jumped down from a tree and bit the man's coat on the side."[38] Apparently the Lynx mistook the man for a Deer. Alas! a fatal error for the Lynx in this case.

There is not a year goes by without a new harrowing tale of some brave man's fight for life against a blood-thirsty, ferocious, yellow-eyed Lynx or Wild-cat, but these accounts are whole-cloth yarns without a vestige of foundation in fact, so far as I can learn.

The big-eyed, big-voiced, big-clawed, simple-minded Lynx is, so far as man is concerned, as harmless as any Jackrabbit.

The Appalling Cry

The stripes on the face, the black ear-tufts, the whiskers, and the little, nervous, twitching, black-tipped tail are, no doubt, important direction marks to help the Lynx's own kind in recognizing it, but its voice is its chief means of communicating with its distant fellows. I never heard a Lynx purr, but all other sounds that a House-cat has, the Lynx has, and uses them in much the same way. I know nothing of the "whistling" mentioned by Nelson in a previous paragraph, as a signal from one Lynx to another when hunting.

Manly Hardy, one of the best authorities, says:

"I know that Lynx make four different noises. All these are very much like the noises made by House-cats, only very much louder. They growl when in a trap, just as a Cat does when trapped. Then there is a noise like Cats fighting. This is a horrid noise and can be heard a long way. Then the Lynx, when travelling, seeking a mate, makes a prolonged 'yeouw' just as a House-cat does under similar circumstances. Then they 'mew' like a Cat.

"Once very early one summer morning, while paddling along the shore of a lake toward the outlet, I heard, on a ridge parallel to the lake, a noise 'between a loon's call and a man's halloo,' as the journal of the trip states. It was a noise I had never heard before. We heard it at intervals several times, and thought it must be a man. On getting near the foot of the lake we turned up a stream which ran through low land with high grass on the

[38] Forest & Stream, June 29, 1907, p. 1011.

banks, and I had just left the canoe to see what the chances were of getting over an old Beaver dam, when I was surprised to hear my partner's rifle. I found that he had heard a mew like a Cat, only louder, and on getting on his feet, saw the head of a Lynx some 8 or 10 feet from the ground on a broken-down cedar. He fired and missed. There was then no doubt that it was he [the Lynx] that we heard. He was travelling toward his usual crossing place, when, hearing me, he had climbed this fallen tree to investigate."[39]

This "horrid noise that can be heard a long way" is what I have called the "yowling",and it may be the song of the Lynx, if not strictly its lovesong.

It begins with a long, low "me-ow," followed by others in quick succession, with rising pitch and volume, mixed with "row-row-row's," till, after three or four minutes' continuous performance, the final "me-ows" are terrific screeches. I have heard this in June, November, and December, and do not know what it means or which sex utters it. But the trappers tell me that the somewhat similar and frightful caterwauling of the males is mostly heard early in March and has a direct relation to the mating.

The first time I heard this unearthly, terrifying yowling was in the Mud Creek Ravine near Toronto (now inside the city limits), in the December of 1876. My Dog, a water spaniel, with a big voice and a small heart, at once disgorged his dinner and fled homeward leaving me to face the danger, whatever it was. I was a slim boy, just recovering from a severe illness. I had no weapon, not even a club, and the example of the brave Dog was too much; I turned and ran as fast as I could for home. That Lynx was killed on Cudmore's Hill about a week later.

The last time that I heard it was at Springfield-on-the-Credit, Ont., on June 20, 1888. We were aroused about 11 o'clock at night by the most appalling screaming. The Horses in the pasture galloped about in fright, the roosters crowed, and every Dog in the neighbourhood barked madly. But the soul-racking raving and wailing went on as the Lynx walked calmly across the valley. The yelling continued for about 10 minutes. I went out with a gun, but the Dog was so panic-stricken as to be no help. I saw nothing of the creature.

Some weeks later, two Coon-hunters with Dogs treed a Lynx at a point 3 miles south of my home. One of the men had but one arm, and he was by nature—well, not a brave man. As soon as the light of a torch showed that the creature in the tree was not a Coon but a big Lynx, this man went wild with fear. He flung his one arm around his companion, begging him, in Heaven's name, not to shoot. "For you know what them Catamounts is. If you wound him, he'll jes' lep down and tear us and the Dogs all to pieces."

[39] Forest & Stream, July 27, 1907, p. 131.

Therefore, much against his will, the younger hunter called off the Dogs and they left the Lynx up the tree. So much for the terror inspired by a big voice and bad reputation. If only they had known what a harmless, soft creature the Lynx really is, how easily destroyed with a charge of bird-shot, the story would have been different and there would have been another innocent creature gone, sacrificed to the blood-lust of the white pioneer.

It is to be noted that in none of the cases of the Lynx yelling cited was the animal seen doing it. So far as the description goes, it fits equally well the maniac song of the Cougar, but the probabilities are all against it being the latter.

In 1913, I received word from John Burroughs which showed that he also had been serenaded by a Lynx. The letter is dated Roxbury, Oct. 12, 1913, and reads thus:

"I thought I knew the natural history of my own part of the country pretty well until the other night. I heard a cry that puzzled me. I dare say you can help me out. My neighbours here who have heard the cry tell me it is a Panther, but I don't believe a Panther has been seen or heard here for a hundred years. Here at Woodchuck Lodge, I sleep on the porch. Last Wednesday night, near midnight, I was awakened by a cry or scream in the swamp about 100 yards below me, the like of which I never heard before. It was a cry or scream so loud that I could distinctly hear the echo in the woods about 400 yards away, a cry that tapered off into a long-drawn wail, which for despondency and agony of soul I have never heard equalled. I can find no words suitable to describe its utter hopeless misery and longing. If a lost soul from Hades had been given a few hours freedom but had to be back on the striking of midnight, it might let off such a heartbreaking moan as I heard. It was a shrill, strident cry, ending in this long-drawn wail, full of the feeling of hopeless despair. The cry was repeated 5 or 6 times, then all was still, and presently I heard the clock strike 12. It was a still, hazy, moonlight night. No one else on the porch or in the house heard it.

"The next night a young, recently married couple from Kansas, who were sleeping upstairs, heard the cry twice at the same hour, and the young woman (a college girl) was so frightened that she had to leave her bed and get into that of her husband; and both of them grew so frightened that they could not go to sleep till daylight.

"I thought I could recognize the call or cry of any of the Cat tribe, and I cannot believe that was the cry of the Puma. Have you heard it? This creature was not suffering from pain of body, but from agony of soul. Four young people here heard a similar cry one night 6 years ago, and were about scared out of their wits, and their Horse was greatly scared also."

The Harmless Lynx

It is nearly 20 years since I killed any wild animal, and that was a Lynx. This is the colourless record as it appears in my "Arctic Prairies":

"Athabaska River, May 19, 1907: At night we reached the Indian village of Pelican Portage, and landed by climbing over huge blocks of ice that were piled along the shore. The adult male inhabitants came down to our camp, so that the village was deserted, except for the children and a few women.

"As I walked down the crooked trail along which straggle the cabins, I saw something white in a tree at the far end. Supposing it to be a White-rabbit in a snare, I went near and found, to my surprise, first that it was a dead House-cat, a rare species here; second, under it, eyeing it and me alternately, was a hungry-looking Lynx. I had a camera, but it was near sundown and in the woods, so it was impossible to get a picture. Therefore I went back to the boat and returned with a gun. There was the Lynx still prowling, but now farther from the village. I did not believe he would have harmed the children, but a Lynx is game. I fired, and he fell without a quiver or a gasp. This was the first time I had used a gun in many years, and was the only time on the trip. I felt rather guilty, but the carcass was a godsend to two old Indians who were sickening on a long diet of salt pork, and that Lynx furnished them tender meat for three days afterward, while its skin and skull went to the American Museum."

It sounds all right and clear, but to this day I cannot forget the kitten-like wonder of those big, mild eyes, turned on me as I fired. He fell without a sound, and when I came up, he still gazed without a moan, without a sign of resentment, with nothing but pained surprise, which my conscience translated into: "So this is your love of the wild things."

Three months later on that same journey, I had a Lynx adventure with a very different ending. Here is the entry; also the evidences. (Plate XXXVI.)

We were in the York boat half a mile from Charleston Harbor on Great Slave Lake when one of the Indians said, "Cheesay" (Lynx), and pointed to the south shore. There, on a bare point, a quarter mile away, we saw a large Lynx walking quietly along. Every oar was dropped and every rifle seized, of course, to repeat the same old scene; for these Indians try to kill every living thing they see. Probably it would have made no difference to the Lynx, for the redmen are bad shots with the rifle; but I, the chief, called out a peremptory order: "Hold on there! I'm going after that Cheesay."

Calling my two reliables, Edward A. Preble and Billy Loutit, we set out in the canoe, armed respectively with a shotgun, a club, and a camera.

When we landed, the Lynx was gone. We hastily made a skirmishing line in the wood where the point joined the mainland, but saw no sign of him, so concluded that he must be hiding on the point. Billy took the right shore, Preble the left, I kept the middle. Then we marched toward the point but saw nothing. There were no bushes except a low thicket of spruce, some 20 feet across and 3 or 4 feet high. This was too dense to penetrate standing, so I lay down on my breast and proceeded to crawl in under the low boughs. I had not gone 6 feet before a savage growl warned me back, and there, just ahead, crouched the Lynx. He glared angrily, then rose up, and I saw with a little shock that he had been crouching on the body of another Lynx, eating it. Photography was impossible there, so I took a stick and poked at him; he growled, struck at the stick, but went out, then dashed across the open for the woods. As he went I got photograph No. 1. Now I saw the incredible wonder I had heard of—a good runner can outrun a Lynx. Preble was a sprinter, and before the timber 200 yards off was reached that Lynx was headed and turned; and Preble and Billy were driving him back into my "studio." He made several dashes to escape, but was out-manœuvred and driven on to the far point, where he was really between the devils and the deep sea. Here he faced about at bay, growling furiously, thumping his little bobtail from side to side, and pretending he was going to spring on us. I took photo No. 2 at 25 yards. He certainly did look very fierce, but I thought I knew the creature, as well as the men who were backing me. I retired, put a new film in place, and said:

"Now, Preble, I'm going to walk up to that Lynx and get a close photo. If he jumps for me, and he may, there is nothing can save my beauty but you and that gun."

Preble with characteristic loquacity said, "Go ahead."

Then I stopped and began slowly approaching the desperate creature we held at bay. His eyes were glaring green, his ears were back, his small bobtail kept twitching from side to side, and his growls grew harder and hissier as I neared him. At 15 feet he gathered his legs under him as though for a spring, and I pressed the button, getting No. 3.

Then did the demon of ambition enter into my heart and lead me into peril. That Lynx at bay was starving and desperate. He might spring at me, but I believed that if he did he never would reach me alive. I knew my man—this nerved me—and I said to him: "I'm not satisfied; I want him to fill the finder. Are you ready?"

"Yep."

So I crouched lower and came still nearer, and at 12 feet made No. 4. For some strange reason now the Lynx seemed less angry than he had been.

"He didn't fill the finder; I'll try again," was my next. Then on my knees I crawled up, watching the finder till it was full of Lynx. I glanced at the beast; he was but 8 feet away. I focussed and fired.

And now, oh, wonder! that Lynx no longer seemed annoyed; he had ceased growling and simply looked *bored.*

Seeing it was over, Preble says, "Now where does he go? To the Museum?"

"No, indeed," was the reply. "He surely has earned his keep; turn him loose. It's back to the woods for him." We stood aside; he saw his chance and dashed for the tall timber. As he went I fired the last film, getting No. 6; and so far as I know that Lynx is alive and well and going yet.

PLATE XXXV.—THE LYNX AT BAY

His Way of Life

Any one who has gazed into the great, round, sincere eyes of a Lynx that is roaming, unfrightened, in the woods, and noted their look of wonder and simplicity, without a trace of ferocity, will believe at once that this huge fuzzy kitten is the most harmless to man and the easiest to trap of any fur-bearer on this list.

A big, soft simpleton he is with the innocence and mild curiosity of a child, and yet a wonderful gift of keeping himself unseen in the woods, however near he may be to you or your camp.

Manly Hardy, the lynx-eyed Lynx naturalist of Brewer, Me., says:

"It is extremely rare for any one to see either of them [Lynx or Bobcat] unless treed by Dogs or in traps. Those who have not had experience have no idea how seldom one sees any of the land fur-bearing animals in the Maine woods. From a canoe one may often have a chance to see and watch Moose and Deer and occasionally a Bear; also one may frequently see Mink or Otter, and on rare occasions a Beaver; but in the woods it is very seldom that one sees either Fisher, Sable, Lynx, or Wild-cat. As an example of this, my partner and I were once travelling on lines of traps every day except Sunday for 8 weeks. Game of all kinds was fairly abundant, and we trapped some of all kinds, but the only living animals we saw, except when in a canoe, were one Moose, one Porcupine, and a Weasel. And yet we caught 3 Bears in one trap quite near our home camp, and once, in a half day's travel, I took out 8 Sable; my partner, at the same time, in a day's travel, getting 7 Sable, a Fisher, a Beaver, and a Mink.

. . . "Many men have travelled the woods for years and never have seen one. I once was walking in a tote road, with my snowshoes on my rifle, when on turning a bend in the road I saw a large Lynx quite near, standing with his forepaws on the deep snow and his hind-feet in the road. While I was trying to get my rifle clear of the snowshoes, he sprang into the brush, and that is the only fair sight I ever had of one out of a trap."[40]

How largely the Lynx is possessed of curiosity has not been adequately set forth. Robeson L. Low, of Flushing, N. Y., writes:

"A few years ago, when on the northeast coast of Newfoundland, my guide, a half-breed named John Paul, told me he set a trap near the foot of a

[40] Forest & Stream, July 27, 1907, p. 131.

tree and blazed the tree on four sides about 3 feet from the ground, and used no bait whatever. He said that Lynx (Link, he called it) were very curious and would stop to investigate the blazes on the tree.

"The winter before (1903–04) he had completed his round of traps, the last one being in sight from a little eminence, when he sat down to smoke a pipe, as he could see the trap had not been disturbed. As he sat there, a 'Link' appeared on the runway upon which the trap was set. The animal walked up to within about 10 feet of the blazed tree before he noticed the blazes. He immediately sat down on his haunches in the snow and looked at the blaze for several moments, and then got up and approached cautiously and walked completely around the tree several times, drawing nearer and nearer. Eventually he stepped on the trap. John said he jumped straight up in the air and squalled."[41]

A good illustration of the usual meeting with a Lynx is given by Emerson Carney of Morgantown, W. Va., thus:

"A fellow-worker and myself were travelling through the woods in northern Colorado, without axes, hunting for a good 'pole patch' where we could get out a lot of fencing poles. The woods were nice and open, without any underbrush; at the same instant we both saw, about 40 or 50 yards ahead of us, a very large Lynx standing on a log, broad side to us and looking at us. We took a good look at it, expecting every second to see it dash away, for we were sure it saw us. After watching it as long as we cared to, we agreed to start walking slowly toward it. We did so, and to our surprise, after we had approached perhaps 20 steps nearer, it started on its way in the direction it had been going, at right angles with our course, walking slowly and deliberately along the log which it was on, turning its big head occasionally to look at us. Of course, we stopped to watch its movements.

"When it reached the end of the log, it walked in a circular course around us, and all the while getting nearer to us, until it was certainly not more than 20 yards from us, as I can now recall it. It was so close I could distinctly see its big yellowish eyes and the glare which is peculiar to the eyes of the feline family.

"While it did not show the least sign of fear of us, neither did it show any hostile disposition, but just looked at us and moved around us as fearlessly and unconcerned as if we were cattle. As it made no move to leave, I picked up a stone and proposed that I make a sudden dash at it, with a possibility of getting near enough to hit it with the stone, but the instant I made the break for it, it darted off like a flash and was soon safely in a jack pine thicket near by.

[41] Forest & Stream, July 13, 1907, p. 52.

"I have always regretted that I did not keep still and encourage its undue familiarity, just to see how near it would have come, and how it would have acted. Certainly its actions were not due to ignorance on account of youth, for it was a very large one and surely full-grown."[42]

A dozen times I have had a similar experience, and whether we attribute the Lynx's calm to courage or to ignorance, it at least looks like a pleasant wild animal dignity.

This calmness and innocence are even more strongly brought out in the following intimate glimpse of Lynx life and character by "Yo" (George B. Grinnell):

"It must have been 20 years ago that I saw a Lynx, which presumably had never before seen man or Dog, and which displayed before Dogs and a gun an unconcern that greatly astonished me.

"It was late in the fall, and we were camped in a lonely spot in the Rocky Mountains on the shore of a great lake. Six or 8 inches of light snow covered the ground, and this kept us pretty close to camp, while we waited, hoping that some warm days would come and the snow would disappear, so that we might continue our hunting. We had been reasonably successful with the game that we were after, and on an aspen tree close to the tent hung several hams of Goat meat. It was full moon, and this moon shining on the snow made the light almost as bright as day, as the saying is.

"About 2 o'clock one night I was awakened by hearing something fall to the ground, and immediately after, the sound of galloping feet close to the camp. Half asleep, I fancied that one of the Horses had come close to the tent, and perhaps had knocked down the axe or had pushed over a pile of pack saddles, and then becoming frightened, had galloped off. Two little Dogs, however, which were asleep in the snow, began to bark and the sound of the galloping stopped almost at once.

"I got up to look out of the door, and one of my companions did the same. As he looked out, he said: 'Why, something has carried off a ham of meat from the tree', and a moment later added: 'There it is in the brush now.'

"Certainly there was seen in the thin underbrush 25 or 30 yards from the tent door, a dark animal that was evidently eating, for we could hear it tearing at the flesh that it had taken. About this dark object the little Dogs were dancing, barking furiously. We cheered them on, and at length they mustered up courage to rush at the animal, which sprang to meet them and seemed to come down on the back of the largest Dog. This proceeding

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[42] Forest & Stream, July 20, 1907, p. 93.

entirely discouraged the Dogs, which were wholly without training, and both Dogs ran away and disappeared behind the tent.

"My companion reached into the tent for his rifle and fired 3 or 4 shots at the animal, and at the last one it again sprang into the air, and turning, disappeared in the thicker underbrush. My companion walked out to where the creature had been, recovered the meat, brought it back and hung it up in the tree, and we went to bed again. Nobody knew what the animal was, but from its motions it seemed pretty clear that it was a Cat of some kind; perhaps a small Mountain Lion or a large Canada Lynx.

"The next morning while we were cooking breakfast, my companion went out where the meat had been and returned with a little tuft of hair, gray mixed with rufous, which had been knocked away by a rifle ball, and which evidently belonged to a Lynx or a Wild-cat. The small size of the depression in the snow where the animal had crouched, and the lack of any mark of a tail, showed that the animal was not a Mountain Lion.

"After breakfast my friend and I took our rifles and set out on the track to see where the creature had gone. The trail was readily followed and the tracks clearly showed a Canada Lynx. After it had left the meat, it had gone only about 30 steps and then had stopped and lain down in the snow, and in this bed was a drop or two of blood. It seemed clear that it had not been much frightened by the noise of the night before, and it was quite possible that we might overtake it anywhere.

"We followed the trail very carefully through the thick brush, making as little noise as possible, and stopping every few steps to look. We had gone nearly 100 yards when the trail turned suddenly to the right, and my friend, who was ahead, stopped and motioned with his hand. I stooped lower, and looking under his arms, saw the animal not 20 yards distant. It was lying in the sun at the foot of and behind the great spruce tree and only its hips were visible. The underbrush was thick, but to my left there was a little opening through which I cautiously worked my way for several yards under the low-spreading branches of a willow. This exposed the animal's side to the shoulder and I shot it as close to the tree as possible. At the report the animal sprang into view and stretched itself out on the snow, dead. It proved to be a large Canada Lynx, and as it lay there, its thick legs terminating in huge paws armed with long claws gave it a much more ferocious appearance than it was really entitled to.

"An examination of the beast showed that one of the shots of the night before had grazed a foreleg, not penetrating the flesh, but knocking up a little flap of skin; whence the blood that had been found in the bed.

"Here was an animal that had sat around, apparently perfectly un-

concerned, while the Dogs were being set upon it and a number of shots were fired at it from a rifle. In other words, from our point of view, it had displayed courage little short of heroic. No Grizzly-bear, and perhaps no Lion, would have remained undisturbed under such circumstances. But did this mean that the Lynx had courage? I do not think so. The hungry beast had come down from the mountains, found food, and then had been attacked by 2 small animals which it no doubt supposed were trying to take that food from it. Subsequently there had been a series of thunderings, the last one of which had hurt, and so the Lynx retreated. It seemed plain to me that it had never seen a man or a Dog or heard a gun before. These were things entirely out of its experience, and it only learned that some of the things were dangerous when the rifle ball touched its foreleg."[43]

Most trappers have a poor opinion of the Lynx's fighting courage, for it never faces a man to fight with him. Why should it, in view of the odds? And in a trap it is easily killed with a single blow of a club on head or back, which proves only its vulnerability.

True, in hunting a Lynx, a single small Dog is enough to make it take to a tree. This shy retreat before the clamour of Dogs is the habit of nearly every creature of the wilds—Lynx Wolf, Cougar, Leopard, Tiger, and Lion. All have a horror of an uproar, and take refuge up a tree or in some fastness, according to their habit, when assailed by the disgusting annoyance of a loud-yelping Dog or Dogs. I should do the very same myself under the circumstances, yes, even if armed with a repeating rifle and backed by a gun-bearer with a couple more.

But in each case, having taken in the situation, the creature is very ready to turn again and rend the disturber of his peace—will certainly do so unless it is backed by men with guns; brave men who run no risk; fearful guns that are irresistible, that are sure destruction, as the Dogs know just as well as hunters do.

So revile not the Lynx for using the discretionary tactics of war that Lion and Tiger too adopt. And remember that though he may hop up into a tree when assailed by a very noisy and very small Dog, he is very apt, having sized up the situation, to adjust his discretion to his courage, come down, and kill the Dog, unless the hunter be close at hand to succour and support his noisy colleague.

Manly Hardy says: "A Lynx has a long reach and sharp claws, and if backed against anything, can often scratch a Dog of poor courage so that the Dog will leave; but any Dog of 40 or 50 pounds that has any grit can kill any Lynx ever made and not get hurt much.

[43] Forest & Stream, July 6, 1907, p. 13.

"In proof of this, my father once outfitted two hunters who hunted on the Aroostook. Lynx were plentiful that year, and when Father visited them in March they had over 20. A light Dog had killed nearly all of them when in a trap. My father saw him kill several. He would turn tail and back up to the Lynx. When the Lynx jumped on his back, he would wheel and catch the Lynx by the throat; he seldom got scratched in killing one."[44]

Of course not! The Dog was free to choose his time and had the backing of two men armed with guns; while the Lynx was manacled, helpless, and weak from hours of torture and starvation. So this proves little. If these trappers had wanted to see a fair measure of the two animals' merits, they should either have nursed the Lynx back to health and strength and then matched him with a 25-pound Dog, or else have beaten the Dog half to death, broken his leg, chained him to a tree, and starved him for 3 days, so that his preparations would have been the same as those of the Lynx.

The case reminds me of a boy I knew at school—a kindly, simple fellow, who would do most anything to avoid a fight; but once he started, once they crowded him too far, he was a terror. He lost all sense of fear, and few there were to meet him in the ring.

The Lynx is probably in this same class. I discount a hundred tales of Lynxes being cowards, because their courage, being physical, is low when they are bound, starved, and helpless. The very pointed contribution of J. B. Monroe of Montana is that of a man who can ignore stock phrases and see with his own eyes.

He enters a most vigorous protest against the Lynx being called cowardly. He points out that daylight is dazzling and puts the big Cat at the same disadvantage as darkness does a man; also that a Lynx that has been tortured and starved from 24 to 144 hours is hardly in the way of a fair show. He says: "I have seen an old male Lynx put up as game a fight as any animal wrapped up in that amount of skin could be expected to furnish," and relates the following in proof:

"We were hunting Wolves and Coyotes in the Sweet Grass Hills, and had 5 hounds. One of them was a very large brindle stag that would weigh 100 pounds. There were 4 more big half-gray and half-stag hounds, some of them good. Besides there were 5 mongrel Dogs that would attack from behind. This made 10 Dogs in all, or about 650 pounds of as hard-fighting Dog as the most ardent fancier could desire. They would catch and finish a Coyote with a fair start in 5 minutes.

"We found only 2 Gray-wolves on this trip, and one was put into a bad land cave after a few moments' run. Three of these cur Dogs went into

[44] Forest & Stream, June 29, 1907, p. 1011.

that hole, and though finally whipped out by the Wolf, worried it so that my partner crawled in and finished her with a shot. The other was a very large, old, she, gray Buffalo-wolf, and the Dogs did not like to kill her, but they finally did so, after half-an-hour's fighting and the expenditure of much fur. We had no gun and the fight was a running one. Those who attacked her in front were punished badly, as she seemed to take out a chunk of Dog at every opportunity. The curs cut her down behind, and the fight was over soon after we came up and helped with rocks. I mention this to show that these Dogs could and would fight and stay with it.

"One day about 10 o'clock A. M., I was out alone with the pack. The Dogs were fresh and eager. I saw a Lynx prowling along the foothills of the mountains, where there were no trees and no cover. The Dogs had only about 300 yards' run and were in fine condition for a battle. The Lynx saw us, ran about 30 yards to a clump of rose bushes about 1½ feet high and waited for us to open the game.

"The Dogs knocked him over at the first rush, but fighting on his back seemed to be his long suit. You could not have heard it thunder during that row, and the Dogs furnished all the noise. Lying on his back, the Lynx's long legs seemed to saw the air in all directions, and every saw brought a howl and blood.

"Four times did he clear himself of those Dogs, and four times they came back, as I encouraged them to attack. I rode up close, and the Lynx, evidently taking me for a friendly stump, cleared the Dogs—or they, expecting the usual shot sometimes given to save the pack, backed off—and sprang for me. He caught one paw in an old pair of chaps I wore; the other caught the cayuse on the muscle of the fore-leg. A big hound caught him from behind as soon as he struck, and when I had quieted that cayuse, the fight was ended. Every Dog was scratched and cut, mostly under the chin and around the neck on the under side. . . .

"I have often thought that all animals of the Cat kind were badly handicapped in daylight by their eyesight. I have always been careful never to send a Dog on a Lion track late in the evening. I believe all animals of the Cat kind in daylight are somewhat like a man in a dark room.

"On a dark night I should not like to visit a trap that contained a husky Lynx, and in the attempt to bat him with the usual club, merely knock him loose from the trap. I think even a 25-pounder could give a fair account of himself under proper conditions.

"There may be some romance, but I think there is also some fight in a full-grown Lynx. If one of our noted fighting men was caught barehanded in an African jungle by a bull Gorilla armed with a four-foot club, do you

think he would stop to argue the point? Most of us would outrun the Lynx. Yet some people call the Lynx cowardly."[45]

I wonder if I have done justice to my childhood's hero, the Lynx. In those early days, by the big log fire, in the old homestead near Lindsay, Ont., I sat, bug-eyed, while hunters and trappers told the most frightful tales of the powers, the ferocity, the devilish cunning of the Lynx, and I drank them in with horrid joy. I suppose those hunters believed some of those tales themselves.

Later I came to know the fur-traders, to whom the Lynx was a mere article of traffic, a harmless, helpless, contemptible thing, as is the doomed convict to the hangman.

Then I met the Lynx, and was amazed at the shining glory of its yellow eyes, and wondered at its calm, childish gaze, its mildness in the woods. Thus I came to know it better and to know the hunter better—and I understood. How can the hangman comprehend the dying thoughts of his victim? Two kinds he says there are: the violently blasphemous, defiant to the end; and the craven, broken wretch, ready to pawn, barter, or promise anything, everything in Heaven or on earth, for a day of respite. So says the hangman—the trapper.

But there is another kind, a kind more often seen—those that meet the end bravely with unshaken courage and dignity. This is a kind the hangman never sees, because it is not in his low nature to see it. Nevertheless, it is there, it is most often there. I have seen Lynxes done to their death. I never yet saw one that did not meet the end with calmness and fortitude—a fortitude that the hangman miscalled, because he did not understand.

God save us from the hangman!

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1799–1814—New Light on the Early History of the Greater Northwest, Alexander Henry's Journal, etc., pub. 1897. Edited by E. Coues. Cited herein as Henry's "Journal."

1829—Fauna Boreali Americana, by Dr. John Richardson, I, pp. 101–02.

1849—Quadrupeds of North America, by Audubon & Bachman, I, pp. 136–44.

1887—Natural History Collections Made in Alaska, by E. W. Nelson, pp. 234–35.

[45] Forest & Stream, Aug. 17, 1907, p. 253.

PLATE XXXVI.—THE LYNX THAT WAS CORNERED AND MADE TO POSE
Photographs by E. T. Seton, July, 1907

1903—Mammals of Pennsylvania and New Jersey, by S. N. Rhoads, pp. 136-41.
1907—Canada Lynx and Wildcat, by Manly Hardy, *Forest & Stream*, June 29, pp. 1010–11.
1907—Their Habits, by Manly Hardy, *Forest & Stream*, July 27, p. 131.

LIFE VI—THE BOBCAT

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The Bobcat, Bay-lynx, Wild-cat, Red Lynx, Red Bobcat, Tiger Cat, Lynx-cat, or Cat-of-the-Mountain

Lynx rufus (Schreber)

(L. *Lynx*, a Lynx; *rufus*, reddish)

Felis rufa Schreber, 1778, Säugt., III, p. 412.
Lynx rufa Rafinesque, 1817, Am. Mon. Mag., Nov., II, p. 46.

Type Locality—New York State.

French, *Le Chat Sauvage de la Caroline.*[1]
Mexican, *Gato Monte.*
Swedish Settlements on the Delaware, *Kattlo* or *Cat Lynx.*[2]

"Just a big Pussy with a bob-tail" is a childish and, as far as it goes, quite satisfactory description of the Bobcat.

The blazing splendour of its eyes, night or day, and the nervous twitching of its forlorn little bob-tail are the next outstanding features.

From its near kinsman, the Lynx, it is easily distinguished afar, in the narrow strip where they do meet, by its colour and its feet.

The Lynx is of a pale gray tinged with lilac in some lights, and has no dark spots on the upper parts of the body. Its feet look enormous. This is partly due to the great length of the hair, and partly because they are considerably larger than those of its cousin.

The Bobcat is of a soft brown, or reddish brown, with cloudings or spots all over the body; and its feet are small, looking like those of a House-cat, for their fur coat is short and sleek.

When near at hand, the tails offer an easy diagnostic, as in Plate XXX; and further, the Bobcat has a white spot framed in black on the back of the ear; the Lynx has only a dim gray trace of this cat-mark. A like difference is seen in much of their colouration. In the Bobcat, the eye-ring is white, the whiskers spring from black stripes, the feet are blackish on the underside, and the spots on its belly are black. In the Lynx, the eye-ring is dim grayish, the whiskers spring from dark gray spots, the soles of the feet are pale

[1]Buffon: Supplem., III, p. 226.

[2]Rhoads: Mamm. Penn. & N. J., p. 139.

Plate XXXVII. Bobcat sketches

gray, and the spots on its belly are dusky. The ear-tufts on the Lynx are 1½ in. long; in the Bobcat, barely 1 in., and sometimes wanting.

The Bobcat belongs to the Cat family, *Felidæ*, and the genus *Lynx*. In addition to the characteristics of these groups, it is well marked specifically.

Size. A ♂ (Am. Mus. 14367) from the Dismal Swamp, Va., Sept. 3, 1898, measured on the dry skin is: Total length, 34 in. (863 mm.); tail, 5⅜ in. (136 mm.); hind-foot, 6½ in. (165 mm.).

These measurements are small. A ♂ taken at Whitewood, Sask., was: Length, 39 in. (990 mm.); tail, 7 in. (177 mm.); hind-foot, 7 in. (177 mm.).

Colour. The general colour of the above Dismal Swamp male is warm brown, paler and redder on the sides of the head, the legs, and the flanks, with a darker shading down the spine, and all more or less peppered with dusky; chin, throat, breast, inside of legs, and all below, white. The lips are white with the whiskers springing from black spots; the ear is black behind with a large whitish spot on it; there are 2 or 3 brown stripes on each cheek; around each eye is a white ring; the legs are thickly spotted with brown dots outside and with a few large blackish spots on the inside. The flank is brown-spotted, and the belly, black-spotted. The soles of the feet are dusky.

The tail is white below and of the back-colour above, with a big black spot on top near the tip, and 3 or 4 blackish spots or bars on the tip half of the tail. Sometimes these lesser tail-spots form faint bars. This represents the late summer and darkest coat; the winter coat is paler, though more tinged with rufous and with the spots obscured. There is no obvious difference in colour between the sexes.

Weight. Bachman gives the weight of a fine adult ♂ at 17 lbs.,[3] and says the ♀'s are smaller.[4] Probably he referred to Carolina specimens. Two ♂'s taken in Ontario are recorded in my Journal at 24 lbs. each. Allan Brooks says that the Plateau Wild-cats of British Columbia range from 15 to 20 lbs., a large ♂ weighing 25 lbs.[5]

In New Mexico (near Clayton) I got fall specimens as follows: ♂, 23 lbs.; ♂, 22½ lbs.; ♀, 20½ lbs.

In Maine, Manly Hardy says: "Our Wild-cats weigh nearly like Lynx, if anything a trifle heavier."[6]

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[3] Q. N. A., I, p. 5.

[4] As above, p. 4.

[5] Recreation, Sept., 1902, p. 174.

[6] Forest & Stream, June 29, 1907, p. 1010.

The type specimen of *uinta*, a ♂ taken by Bailey at Bridger's Pass Wyo., weighed 31½ lbs.[7]

At the National Zoo, Washington, D. C., 3 Bobcats were received from Wardo, S. Dak., on Jan. 15, 1912. They were 2 ♂'s and 1 ♀ and weighed respectively 28¼ lbs., 32¾ lbs., and 39¾ lbs. Thus this ♀ has the record weight for the species.

From this we have a good idea of a Wild-cat's weight; and when hunters tell of a "65-lb. Wild-cat" that they have secured, we may rest assured that the weight was an enthusiastic hunter's *guess*, quite untrammelled by the help of scientific instruments.

Races

The following races of Wild-cats have been recognized:

rufus Schreber, a middle-sized reddish animal. T. l., New York State.

texensis Allen, a deep-coloured, much-spotted race. T. l., "Mexico."

californicus Mearns, like *texensis*, but browner and less spotted. T. l., San Diego.

eremicus Mearns, a pale grayish animal. T. l., New River, near Laguna Station, Colo. Desert, Imperial County, Calif.

escuinapæ Allen, like *californicus*, but smaller, with short coarse hair, more rufous in colour, with abundance of black spots and streaks on back, and soles not black. According to Dr. J. A. Allen, this creature appears in two colour phases, red and gray. T. l., Escuinapa, Mex.

floridanus Rafinesque, a small dark form. T. l., Florida.

peninsularis Thomas, like *californicus*, but very small with much smaller skull. T. l., Santa Anita, Lower Calif.

fasciatus Rafinesque, a West Coast form; it is richly coloured, chestnut and bay, and conspicuously spotted with black on the under parts. T. l., "N. W. Coast," probably near the mouth of Columbia River.

pallescens Merriam, like *fasciatus*, but smaller and grayer. T. l., south side of Mount Adams, near Trout Lake, Skamania County, Wash.

oculeus Bangs, like *fasciatus*, but dusky on the back, and lacking the red tinge. T. l., Nicasio, Marin County, Calif.

baileyi Merriam, a large animal, very pale, with short tail; its back

[7] See Wild Anim. Glacier Nat. Park, 1918, p. 82.

coloured like that of Canada Lynx. T. l., Moccasin Spring, Coconino County, Ariz.

uinta Merriam, large and gray, like *baileyi*, but darker. T. l., Bridger's Pass, Carbon County, Wyo., 18 miles southwest of Rawlins.

gigas Bangs, a very large, dark form, confined to Nova Scotia. T. l., 15 miles back of Bear River, N. S.

Range, with Map

The Bay-lynx of books, the Bobcat of hunters and trappers, is distributed throughout the transition or southern temperate zone of North America, from sea to sea.

It will be noted that its distribution is much like that of the Whitetail Deer, the Big Skunks, and one or two others, and each of these develops a race that reflects the environment of each new area that it enters.

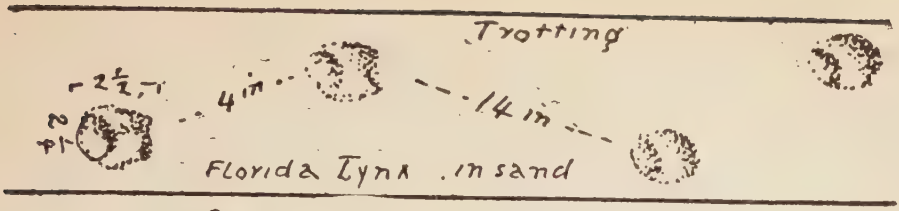
Whether these are subspecies, that is, species in the making, or full species, which means finished product, with hallmarks differing from those carried in the next faunal area, is not in my province to determine. I accept the ruling of the latest accredited skull-man as probably safest, and focus my attention on the life-history—the little mind and how far it has got. How many minds has the Bobcat? It seems wisest here to be conservative and save space by treating the Bobcat mind as one—the one big over-soul of the group. It may have evolved new habits in its widespread range, but I have met with the creature from Florida to Montana and south to Texas, and I cannot discover any difference in mentality or methods other than are imposed by different surroundings, so that taken by and large, there is but one Bobcat from the life-history viewpoint, with the inevitable disturbing factor of individual variations cropping up with pertinacity, unexpectedness, and force, when we try to frame some hard-and-fast rule.

The range of the Banded-Bay-Lynx-Bob-Wild-cat affords some interesting peculiarities.

Beginning at the extreme east, we find that during primitive times in Nova Scotia "the Wild-cat is more abundant [in Acadia] than the former animal [Canada Lynx] and is nearly of the same size."[8] This, of course, is the form *gigas*.

Leith Adams entirely omits it from his very complete "List of Mammals of New Brunswick" (1873), and Manly Hardy mentions as noteworthy that he, "when in St. Johns, N. B., some 40 years ago, was told that 3 had

[8] Campbell Hardy: Sporting Adventures in the New World, 1855, vol. I, p. 54.



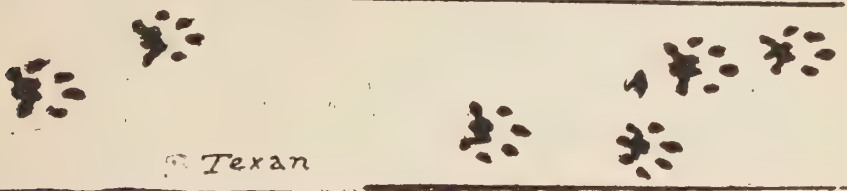
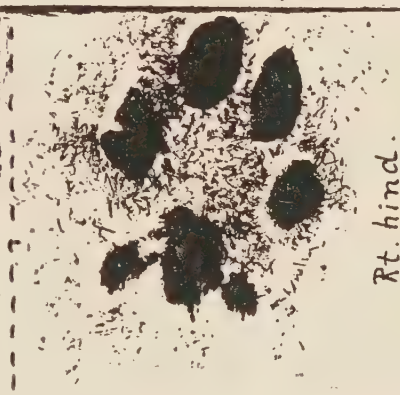
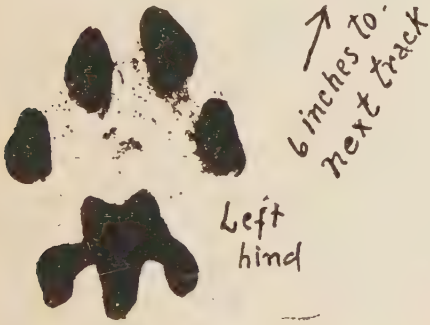


Plate XXXVIII. T. Lynx.
ink tracks
on haher
24 Mar. 1902 E.T.S

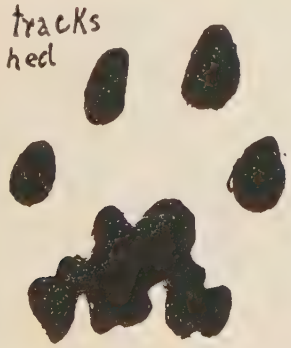


Tracks of Texan Lynx
(untouched.)



Texan Lynx 1/7

black tracks retouched



Bobcat that was taken at Whitewood, Sask., just west of Russell, Man., about 4 years before.

V. Bailey says it was numerous in Dawson County, Montana, 1887.[16]

In May, 1914, at Banff Museum, I was shown a Bobcat recently killed at Devil's Head, 40 miles due east of Banff, and was assured that they are found all along the foothills up to that point but no farther northward.

In British Columbia, Allan Brooks fixes Shuswap Lake as the northern limit.[17]

So far as I can determine it, I have indicated the northern limit in primitive times by the tint and the modern farther-reaching range by the dotted line; for we find a change that seems to prove the furtive Bay-lynx of a kind that thrives with the new opportunities of partial settlement, in spite of the new dangers.

Haunts

While this animal, like most of the family, is a creature of dense cover and rough, rocky hillsides, there is a marked difference between its chosen home surroundings and those of the Canada Lynx. The Lynx is essentially an animal of primitive evergreen woods; the Bobcat prefers broken woods varied with precipitous cliffs, sunlit glades, hardwood timber, and swamps. Otherwise expressed, the Lynx is a Cat of the big timber and a Canadian climate; the Bobcat is a Cat of the little timber and a United States climate.

According to Manly Hardy, these two differ widely in their choice of home surroundings. "The Lynx," he says, "inhabits the deep woods, while the Wild-cat lives mostly near the settlements, and probably the great majority of the Wild-cats now in Maine are not 5 miles from some house."[18]

In Dixieland, this animal abounds in the great canebrakes or swamps that are a characteristic border of the rivers and lagoons, especially in the lower Mississippi Valley.

Bachman says it "frequents the thickets that generally spring up on deserted cotton plantations, some of which are 2 or 3 miles long, and perhaps a mile wide, and afford, from the quantity of briers, shrubs, and young trees of various kinds, which have overgrown them, excellent cover for many quadrupeds and birds."[19]

[16] Rep. Orn. & Mamm., U. S. Dept. Agr., 1887, p. 432.

[17] Recreation, Sept., 1902, p. 174.

[18] Forest & Stream, July 27, 1907, p. 131.

[19] Q. N. A., I, p. 6.

Bailey's description of its Texas home surroundings is particularly happy and strong in local colour.

"The country occupied by this Plateau Wild-cat," he says, "is mainly open, arid, and rocky. Canyons, gulches, and cliffs are its favourite haunts and hunting grounds, while caves and clefts in the rocks furnish dens and safe retreats from which hunting excursions are made into the valleys and even to the edge of the plains. Fresh tracks are frequently seen where the Cats have followed the lines of the cliffs, crept along narrow shelves of rock from one Wood-rat's den to another, or walked noiselessly in the dust, under and around the great boulders and broken talus at the base of a cliff where the Cottontails hide."[20]

In Florida, I found its tracks and signs of general distribution in every palmetto stretch.

In the Rockies the Lynx was the creature of the dense pine forests with the Bobcat his near neighbour here, but theoretically not overlapping his territory.

To sum up these various testimonies, the Lynx is a thing of the primitive forests, and retreats as they fall, just as do the Marten, the Fisher, and the Wolf. The Bobcat is a lover of the half-open country, and having learned many clever tricks by which he can avoid the evil beast that makes the clearings and that is better known as Man, he follows the advance of said evil beast and preys on its resources, with skill and success until the clearing process is pushed overfar; then the Bobcat succumbs. But at present he is, like the Fox, the Coon, the Possum, and the Woodchuck, one of those talented creatures that expand their range with the onward march of the settler (see map).

Numbers

The compiled reports show that, though the Bobcat has become greatly reduced in the northeastern States, it holds its own with little diminution in the south, southwest, and the Rocky Mountain region.

In Maine it is not uncommon now, but Manly Hardy says that about 1860 it was more abundant than it has ever been since; apparently there was at that time a sort of invasion of Wild-cats.[21]

According to Rhoads (1903), the Wild-cat is exterminated in only 13 of the 67 counties of Pennsylvania,[22] and since the removal of the head-money, it is actually increasing again. Henry W. Shoemaker records the

[20] Texas, p. 170.

[21] Forest & Stream, July 27, 1907, p. 132.

[22] Mamm. Penn. & N. J., p. 141.

names of a dozen hunters who have killed over 500, and George Smith of Elk County, who killed 500 Catamounts and 600 Wild-cats.[23]

In New York State, according to Merriam,[24] it is often quite common even in thickly settled localities.

In Massachusetts it is still found, though rare and confined to the wooded and hilly section of the west.

According to an editorial in the Natural History section of *Forest & Stream*, Feb. 20, 1909, p. 291, $5 bounties have been paid for Wild-cats killed in Berkshire County, Mass., as follows: 20 in 1903, 22 in 1904, 23 in 1905, 20 in 1906, 12 in 1907. It is possible that some of them were Canada Lynx, but most likely all were Bobcats.

In Ontario it is still to be found south of the Ottawa, though not common.

In northern Michigan it is common.[25]

In Dixieland it is generally distributed and common, though reduced in numbers.

In Alabama it occurs in moderate numbers.[26]

In Florida it is generally distributed and common to-day.

According to the report of Game Warden Bryan of East Baton Rouge Parish, Louisiana, the last year the game bag of his territory included 55 Wild-cats.[27]

In Texas, according to Bailey, 1905: "It is common over southern and eastern Texas and especially abundant in the dense chaparral of cactus and mesquite along bushy stream bottoms, and in the timbered gulches where the lower arm of the Staked Plains breaks down into the low country, and in the swamp country farther east. At Port Lavaca, Oberholser reports 'The Wild-cats are common in places away from town where there is sufficient cover, such as live-oak thickets and the great rose hedges. In the thickets they are not so difficult to hunt, but in the hedges they have almost impenetrable cover, and it is well-nigh impossible to reach them except by trapping.' He says that at O'Connorport 'a good many Wild-cats inhabit the thicker part of the oak brush, where they can be hunted only with Dogs'; on Matagorda Island 'they occur in the little chaparral that grows on the island'; and at Beeville 'they are common in the denser portions of the chaparral, where specimens are frequently secured not far from town.'

[23] Penn. Wildcats, 1916, pp. 28–29.

[24] Mamm. Ad., p. 41.

[25] C. C. Adams, 1905, Ecol. of N. Mich., p. 131.

[26] Howell: N. A. F., no. 45, 1921, p. 42.

[27] Forest & Stream, July 10, 1909, p. 56.

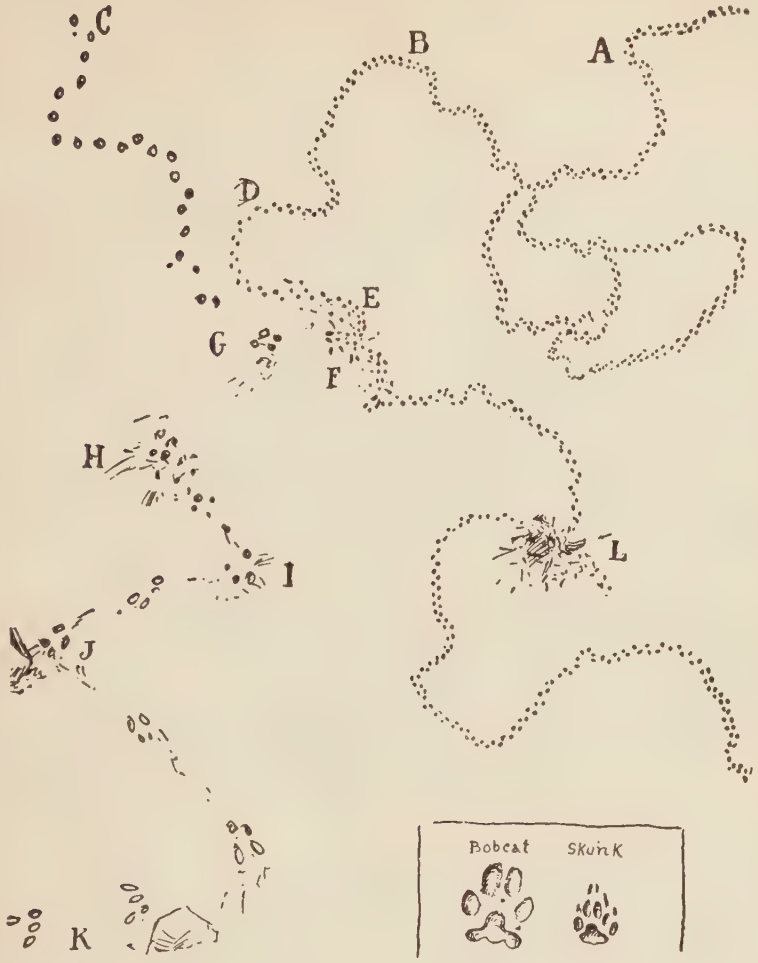


PLATE XXXIX—Track Record of a Fight between a Skunk and a Bobcat. They met at G. E. F. The defeated Bobcat fled toward K New Mexico, Nov., 1893.

From Corpus Christi to Brownsville, in 1900, Wild-cats were common along streams and in the chaparral, where their tracks were abundant in the dusty trails and on the muddy margins of streams and pools, but where the cover was generally too dense and thorny to admit Dogs or to allow any method of hunting save by traps or poison. . . . Common at Uvalde, Devil's River, Kerr County, and farther east at Seguin, but in no other locality so abundant as in the Big Thicket of Liberty and Hardin counties."[28]

In 1920 I found it common in eastern Arkansas. In 1892 it was quite common among the brakes of northern New Mexico, and in 1912 I found it somewhat general in the cover country north of the Yellowstone Park.

The Biological Survey reports that for the year ending June 30, 1918, its agents have destroyed 3,432 Bobcats and 30 Lynxes. These were chiefly from the Rocky Mountain region and the far Southwest.[29]

In California it holds out well. Stephens reports it common in 1906.[30] "The Wild-cat (*eremicus*) is still found in numbers here as indicated by the number being trapped in the Monterey district of the Santa Barbara National Forest."[31] And Nelson says that "one winter, some boys with Dogs killed more than 80 Bobcats" at a mountain ranch in the redwood forest south of San Francisco.[32]

Its Success. While still abundant in Dixieland, Florida, Texas, and California, which may mean nearly holding its own, we have the delightful assurance of Rhoads that it is increasing in several counties of Pennsylvania, following the deforesting of sundry large districts; thus it takes advantage of the half-open woods so much to its taste.[33]

So also Manly Hardy testifies to its increase with the opening up of the Maine hinterland,[34] and in Manitoba it has not only increased with settlement, but has come in and spread over vast areas where formerly it was quite unknown.

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[28] Texas, pp. 169–70.

[29] Rep. Biol. Surv., Aug. 29, 1918, p. 3.

[30] Cal. Mamm., p. 210.

[31] H. H. Hunt., Cal. F. & G., Jan., 1902, p. 37.

[32] W. A. N. A., p. 412.

[33] Mamm. Penn. & N. J., p. 140.

[34] Forest & Stream, July 27, 1907, p. 131.

Home Range

At present I have no material to prove the size of a Wild-cat's home range. Probabilities and analogy would show it to be not more than a thousand acres in regions where food was plentiful, but larger in a starved land. Indeed, it has been known to go a-hunting as far as 5 miles from home.

In a richly provided dense cover of a small area, a Wild-cat will settle down comfortably, feeding contentedly on his tenantry, and never venturing farther afield than he has to, except, perhaps, when for reasons well understood, he goes, in the breeding season, gallivanting fast and far, nor ceases his travels till he finds what he went after.

Den

The den of a Wild-cat is at times under an old log, under a slashing, or in a thicket of vines, but the favourite place is in a standing hollow tree, sometimes with the opening 20 or 30 feet up, but generally much nearer the bottom, frequently in a cavity at the root, and occasionally in a hollow log lying on the ground. The nest is always lined comfortably with a pile of dried leaves and soft moss.

Sanitation

A pair of Uinta Bobcats that I kept in my menagerie for over a year were very careful about their sanitation—at least, I suppose they thought so; for regularly, after their morning drink, they turned about and carefully dropped their excretes in the water trough. In the cage this was, of course, unclean, but in natural surroundings would have been quite correct, for our engineers assure us that sufficient dilution amounts to disinfection. The principle is clearly recognized in a mosaic ordinance. After listing a vast number of things as unclean, and stating that any of these, falling into a drinking vessel, pollute it with its contents so both must be destroyed, the great Law-giver adds: "Nevertheless, a fountain or pit wherein there is plenty of water shall be clean."[35]

Arthur F. Rice gave me this interesting note on the sanitary habit of the big Nova Scotia Wild-cat. There is near Digby, N. S., a long glacial dump.

[35] Leviticus, XI, 36.

On this are a great many ant-hills, and on every ant-hill a Wild-cat has left a pile of its excretes.

Mating and Young

The mating of the Wild-cat apparently takes place during late February or early March in the northern part of its range, and about a month earlier in Dixieland. But there are no definite observations available to fix the date.

In the common House-cat, gestation lasts 55 or 56 days; in the Cougar 91 to 97 days; the Canada Lynx is said to go about 90 days. Since there is usually a relation between the size of the animal and the length of gestation, we are safe in assuming the bearing period in the Wild-cat to be *about* 70 days.

The young vary from 2 to 4, but generally are 3 in number. As usual in this family, they are small, blind, and helpless at birth.

Bachman says that his friend, Dr. Samuel Wilson of Charlestown, contributes this note: "April 15, 1839, shot a female Wild-cat as it started from its bed, out of which 4 young ones were taken; their eyes were not yet open." Then adds "Our friend, Dr. Desel, whom we have already mentioned, saw 3 young ones taken out from the hollow of a tree which was 30 feet from the ground. On 4 occasions, we have had opportunities of counting the young, either in the nest or having been very recently taken from it. In every case there were 3 young ones."[36]

In Carolina, they are produced toward the end of March or the first week of April, and in Pennsylvania 2 were taken May 15th, apparently not a week old.[37] Rhoads had sent to him a Pennsylvania specimen April 20, 1897, which contained 3 young nearly ready for birth. This agrees with other testimony that in the North the young ones come about May 1.

The Father

Analogy, and we have no positive data, leads one to believe that the Wild-cat is monogamous but that the male has nothing to do with the kittens while they are blind and helpless in the nest. At that time, however honourable his intentions, he is certainly sent elsewhere about his business by the anxious mother.

Whether he comes back later to do a share of the work in raising the brood is yet to be proved. So far, no one has offered any observations in point.

[36] Q. N. A., I, pp. 13–14.

[37] As above, I, p. 13.

For the benefit of those who have opportunities to see, I suggest: the presence of 2 adults with a family of young Bobcats in May, June, July, or August, is partial proof that the male helps in rearing the young.

It is, of course, much stronger if these adults be proved male and female; and if, further, the male is seen bringing food or defending the little ones, the evidence is nearly conclusive.

Family Life

The most interesting picture I find of the Bobcat family life is given by "Blennerhassett" of Parkersburg, W. Va. He was on a fishing trip in the mountains of his state one autumn day, and noticed a chestnut tree that had yielded an unusual crop of nuts. He proceeds: "While I was looking at the tree and admiring its beautiful proportions, a full-grown Wild-cat with 2 kittens so small that they were barely able to keep up with the mother Cat emerged from a clump of underbrush a few yards below.

"The old Cat was doubtless giving her young a lesson in woodcraft, but she had committed a serious error in bringing her little ones to that particular spot, as she seemed to realize in a moment; for, after a few sniffs at the ground and in the air, the hair on her back went up in a line from the top of her head to the end of her short stubby tail. Then catching one of her kittens by the loose skin on the back of its neck, she sprang up the chestnut tree as quick as thought, and deposited the kitten upon a limb close up to the bole of the tree.

"Leaving the startled kitten there, she quickly scrambled back to the ground, and caught up the other young one just as an enormous old half-wild Razorback Boar, with tusks at least 5 inches long, dashed out of the brush not a dozen feet away, closely followed by a wild Sow with a litter of Pigs about the size of Rabbits. The Cat barely made her escape, for before she had ascended the tree 10 feet, the old Boar was stamping and grunting in baffled rage at its foot.

"After depositing her kitten in the crotch of a limb, the Cat descended to one of the lower branches, overhanging the ground, but out of reach of the wild Boar, who was tearing around the tree, foaming at the jaws, and snapping his great teeth with rage. Neither of the animals saw me as I peered through the brush of laurel above them, and as I was on the leeward side, they could not scent me at that distance, and I sat there forgetful even of the big trout I had climbed the mountain to catch, and looked on, wondering what the old Cat was up to, for that she had some particular object in view when she took up her position so close to the ground, I was satisfied. That she intended springing upon the wild Boar and fighting it out then and

Plate XL. Bobcat hunting.

there, I could not for a moment believe, for I knew—and she must have known even better than I—that she was no match for an animal that a full-grown Bear would have hesitated to tackle.

"But the old Wild-cat had no intention of testing the fighting qualities of the Boar, though she kept a close watch upon his movements. Meanwhile the Sow and her Pigs seemed to become satisfied that as long as they had the protection of the Boar they were entirely safe, and in a little while they began to feed upon the chestnuts, which literally covered the ground beneath the tree. Closer and closer some of the young Pigs approached to the ground beneath the limb upon which the Cat crouched, until at last one of the Pigs, while rooting around among the leaves, worked its way to a spot a little to the right and almost beneath the crouching Cat. I caught a slight movement of the latter as she crouched lower and lower, and a second later she sprang out and landed upon the unfortunate Pig. Then an agonized little squeal from the Pig, and the Cat was bounding away with the wild Boar in pursuit, the Cat carrying her victim in her mouth, much as a pointer Dog carries a fallen game bird, bounding along the mountain shelf in plain view, seeming barely able to keep out of reach of the formidable tusks of the Boar. Over fallen logs and rocks they ran, the Boar sometimes so close that it seemed to me he would overtake her in another second; then around a clump of brush, a big log, or rock, they would disappear for a moment, to reappear with the Cat still ahead.

"How long the chase had lasted I do not know, so interested was I, but I saw her at last at the foot of a ledge of rocks a couple of hundred yards away. One glance must have convinced the Cat that she could not ascend the cliff weighted down with the body of the Pig, for she gave it a vicious crunch and threw it aside just as the old Boar crashed through the brush a few feet away. Then, with a screech of rage and victory, she sprang up the rocks and disappeared, leaving her enemy champing and frothing over the body of the dead Pig.

"Turning my attention now toward the chestnut tree, I found that the Sow and her family had also disappeared in the undergrowth, and while I was looking, the old Cat crept out of the brush and sprang up the tree to reappear a minute later with one of the kittens in her mouth. Dropping the little bobtailed fellow at the foot of the tree, she reascended and again returned with her remaining kitten; then after fondling and purring over them a few minutes, for all the world like an old house Tabby, she trotted off, followed by her family, and disappeared in the forest."[38]

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[38] Forest & Stream, June 15, 1907, p. 935.

Sociability

Game Warden F. J. Durgin of Somerset County, Maine, reports having seen the tracks of 11 Wild-cats in one drove, and says it is a common thing to see 3, 4, and even 6 at one time.[39]

Allan Brooks says of the Plateau Wild-cat (*uinta*): "They seem to hunt in company, as I once saw the tracks of 5 travelling abreast of each other in newly fallen snow."[40]

Thus it is like its cousin, the Lynx, in being somewhat sociable at times.

Voice

Animals high in the scale usually have vocal powers that correspond with their sociability. The Wild-cat does even better than that rule.

"An individual," says Bachman, "that was kept alive at Charleston, and afterward for a short time at our house in the City of New York, showed its affinity to the domestic Cat by purring and mewing at times loud enough to be heard at some distance. At the former place its cry was several times mistaken for that of the common House-cat. In the woods, during the winter season, its loud caterwauling can be heard at the distance of a mile."[41]

As everyone knows who has seen a newly caged Wild-cat, it is one of the most ferocious looking brutes in the Zoo. It distorts its face with all the lines expressing rage, almost with no provocation, and growls, puffs, hisses, and spits in true style of a fighting Cat, but seems to do it oftener and more readily than any other of the group. It is largely from this perpetual ill-humour that the name "Wild-cat" has become a synonym of fighting ferocity.

Like the Cougar, the Jaguar, and others—probably all others of the family—the Wild-cat has nearly the same vocabulary as our House-cat, but multiplied and intensified in proportion to the creature's greater size.

I have indeed heard the Wild-cats' yells described as appalling at times, precisely like the most hair-lifting efforts of the Cougar, but, of course, less loud and far-reaching. In the Lynx chapter is a description by John Burroughs of that animal's midnight serenade; it is more than likely that the account applies equally to the Wild-cat.

Curiosity

Most wild animals that have high mentalities and are not perpetually afraid have a large share of curiosity to which they commonly yield. The

[39] Forest & Stream, Jan., 1911, p. 135.

[40] As above, Mar. 13, 1909, p. 412.

[41] Q. N. A., I, p. 13.

Wild-cat, like the Lynx, the Cougar, the Jaguar, and other kinsfolk, often follows the hunter out of mild, unhostile desire to find out what this new strange critter is like and what he is up to now.

Ransacker writes: "While fishing for trout near camp [in Shasta Mts.] upon another occasion, I saw some animal following me at close range. Dropping my rod, I walked carefully around some rocks and bushes and came within 10 feet of a Lynx [Bobcat]. This one immediately turned, jumped away a few yards and crouched down. He remained there until I went a short distance to camp and returned with a gun. When he saw me returning, he started away, but he was too leisurely inclined to save his life. I believe that this was the only one I ever saw that seemed aggressive, and I think he was more inquisitive than otherwise."[42]

Swimming

It is not a very active swimmer, and yet is ready to take to the water, especially if it be not too cold. Bachman observed one crossing the Santee River of its own free will, and at another time saw one swimming across some ponds to make its escape from the Dogs. He adds, however, that when it has taken to the water during a hard chase, it soon after either ascends a tree or is caught by the hounds,[43] from which we agree that up aloft it has a better feeling of security than afloat. Later on is an incident given by Harry R. Walmsley that details the half-mile swim of a Bobcat in an icy flood. The creature dodged it as long as possible, but took the water bravely when it had to.

Shyness and Slyness

I have lived for a number of years in their country and never yet saw but one living Bobcat until it was either trapped or treed by Dogs. Manly Hardy, who lived for over 50 years among Wild-cats and trapped many, says he never saw but one out of a trap.[44]

This is partly due to their nocturnal habits, but chiefly to their consummate stealth, their successful furtiveness, for they do prowl occasionally in the full blaze of sunlight.

Food Habits

In Dixieland, the natural food of the Wild-cat is the little folk of the underbrush, especially such as live on the ground—Rabbits, Squirrels, Chip-

[42] Forest & Stream, Aug. 10, 1907, p. 212.

[43] Q. N. A., I, p. 13.

[44] Forest & Stream, July 27, 1907, p. 132.

munks, Rats, Mice, grouse, quail, turkeys, meadow-larks, ground-birds of all description, and eggs.

It never finds a nest of big bird or small without sucking or devouring every egg in it, no matter what their condition.

It is very rarely that it gets a bird in the trees, even while they are roosting; for the smaller ones are too small to find, and the bigger ones, like turkeys and grouse, are too alert.

When it discovers a flock of wild turkeys, it will generally follow them at a little distance for some time to study their course. After having learned that, it makes a rapid détour, and hiding behind a fallen trunk, or in the lower branches of some tree, patiently waits in ambush until the birds come within reach; then with a sudden spring secures the nearest.[45]

During a visit to northeastern Arkansas in the first week of Feb., 1920, I was told by several hunters that the high prices commanded by furs were stimulating the trappers to such an extent that Bobcats (*Lynx rufus*) were getting scarce, and the immediate result of that was a marked and steady increase of wild turkeys.

The stalking of the turkeys, as well as the capture of Squirrels and Chipmunks, must have taken place in daylight, for the Wild-cat is a Lynx, and is lynx-eyed in full day.

But it is equally successful as a hunter in the dark. It is, in short, a Cat in its powers, needs, and ways of thinking.

Sometimes, by way of variant, it will, in sultry weather, follow the dry beds of streams or brooks to pick up the catfish, etc., or crayfish or frogs that remain in the deep holes of the creeks during the drought of summer.

So far, it has not been proven to dig out the eggs of turtles or to eat snakes or insects. Otherwise its bill of fare includes every living thing in the square mile that it considers home. Nor does it stop here if necessity drive. For the farm and the farmyard are really fine sources of revenue, provided an offset can be found for those unpleasant accessories, the Dogs and guns. The best answer to the problem is found in stealthy approach and black darkness. Like the Ocelot, it is a marvel in such raid work. Lambs, little Pigs, turkeys, geese, ducks, and chickens are acceptable in proportion to their size. And the damage of one Wild-cat is estimated by Bachman to equal that of a dozen Gray-foxes.[46] There is, I believe, one bird of the barn that it rarely or never gets; that is the guinea fowl. For no matter what the hour, the light, or the suddenness of the attack, the guinea has the wit to spring that infernal alarm racket for which she is so notorious, and the re-

[45] Q. N. A., I, p. 12.

[46] As above, p. 8.

Plate XLI. Bobcats (uinta)-Poses
Photos by E.T.Seton

sult is that the exquisite nerves of the high-strung Wild-cat are so much shell-shocked by the hideous grating uproar that he loses not one instant before taking precipitate flight.

As evidence of the Wild-cat's destructiveness, note the following by Manly Hardy: "My father once saw 13 fully grown Sheep which 2 Wild-cats had killed in one night on Mt. Desert Island. I know of several cases where Wild-cats have entered barns and outbuildings and killed numbers of hens and ducks."[47]

In Texas, "the food of this, like other species of Lynx, consists mainly of Rodents, Rabbits, Wood-rats, Groundsquirrels, Gophers and Mice, with a few birds and occasionally some poultry."[48]

"Most of the Wild-cat's hunting is done at night, but occasionally one is surprised at midday crossing a valley to another cliff, or found toward evening getting an early supper. One shot among the rocks near Alpine just before sundown had already caught and eaten a Wood-rat, which made a good beginning for a meal."[49]

The stomach of an individual killed in Big Thicket "was full of venison that had not been perfectly fresh when eaten, probably from a Deer that had been wounded by some hunters a week before. The hunter with me said he had examined the stomach of one, not long before, that was full of Wood-rats, and Gaut found Wood-rats in the stomach of one examined at Sour Lake."[50]

"Here and there in some rocky corners of the cliffs [in Texas], one finds elongated pellets of bones and fur, some freshly deposited, others old and bleached, and these throw important light on the food habits of the animal. Bits of fur, teeth, and jaws serve to identify many of the mammals that have been eaten, and usually disclose a great preponderance of Rabbits and Wood-rats. Traces of many smaller rodents and a few bird feathers and bones are found, but no remains of food other than animal. The ranchmen complain of some poultry being killed, and still worse, a few Sheep, as well as young Goats and Pigs. This, with a few quail and other birds, is about all that stands against the account of the Wild-cat, with a much larger amount on the credit side."[51]

In British Columbia, where the form is the Plateau Wild-cat (*uinta*), its sources of support are comprehensive as elsewhere, and Allan Brooks

[47] Forest & Stream, Mar. 13, 1909, p. 412.

[48] Texas, p. 170.

[49] As above, p. 170.

[50] As above, p. 170.

[51] As above, p. 171.

remarks: "In habits, the Plateau Wild-cat species resembles other species, being rarely seen even in districts where it is common, doing nearly all its hunting at night, though I once observed one hunting *Spermophiles* at noon of a summer's day."[52]

In California, D. W. Maxey, of Gorman, testifies that he "recently opened up 2 Wild-cats (*Lynx eremicus californicus*) to see what they had been eating. In the stomach of one, I found the remains of 2 small Plymouth Rock chickens which must have been caught at least 5 miles from where the Cat was killed, and in the other the remains of 3 mountain quail."[53]

On the same page, H. H. Hunt writes: "Wild-cats feed on the smaller game animals and birds. I watched one of these animals in his attempts to secure a breakfast last summer. He stole up on a covey of mountain quail, and as he flushed them, got 2. I have found feathers of both mountain and valley quail, which investigation proved were left from a feast by Wild-cats."

Similarly, in the July, 1919, number of the same magazine (p. 160), Donald D. McLean says: "On March 10, 1919, I killed a female California Wild-cat near Coulterville, Cal., which had been feeding entirely on song birds. The stomach contained the remains of 6 Western robins."

It is quite possible that the tragic incident given later was the result of the Bobcat mistaking the horned owl for a wild turkey.

Hunter

The Wild-cat is essentially a hunter, and lives on new-killed prey, preferably, although not exclusively, his own catch. While primarily his living is drawn from creatures of lighter weight than himself, there are times, or perhaps it is better to say there are Wild-cats, that break all rules, and in the vigour of their personal prowess, delight in matching their power with that of vastly bigger and doughtier game. Rhoads tells of a Wild-cat that was riding to its death a female Deer.[54]

Game Warden F. J. Durgin of Somerset County, Maine, claims that they kill many Deer.[55]

In Maine, "the Wild-cats kill more or less Sheep and Deer," says M. Hardy, and adds: "I know one man who saw 3 eating on a Deer which they had killed. . . . Like the Lynx, Wild-cats bite the throat of Deer and

[52] Recreation, Sept., 1902, p. 174.

[53] Cal. F. & G., Jan., 1920, p. 37.

[54] Mamm. Penn. & N. J., p. 140.

[55] Forest & Stream, Jan., 1911, p. 135.

Sheep. My father once saw 13 Sheep hauled in on a sled, all killed in one night by 2 Wild-cats, and all had their throats bitten."[56]

And Stephens, in his account of the Desert Bobcat of California, says: "I can learn of but 3 instances of their having attacked people, all occurring in San Diego County. Two of these attacks were unprovoked, and the third was practically self-defense."[57]

Fighter

Shy as any wild thing is the Bobcat, rarely seen except by accident, and then is quite ready to forego all battle honours and retreat in search of peace. Nevertheless, like many a timid, law-abiding citizen, he can be terrible when put to it by desperation.

A. D. McCandless, speaking of hunting Bobcats in Nebraska, says that he saw one "killed in a swamp in Cherry County, in this State, 2 years ago by 6 hounds. These Dogs were large and very savage, being a cross of Greyhound with the Staghound. They were kept and used for killing Coyotes and Wolves. They are owned by Mr. S. E. Stilson, of Pullman, Neb., and any one interested can learn something about Lynx and Wild-cat and the fighting ability of each by writing to him. I have seen a good many packs of good fighting Dogs in the Coyote country, but never one as formidable as the Stilson pack, and I can verify the fact that when they got through with the Lynx, they were each and all badly used up; but that same pack of Dogs will kill a Coyote and never get a scratch."[58]

"Ransacker," after hunting Wild-cats or Red Lynxes for 30-odd years, killing half a hundred in that time, writes from Shasta Mountains, California:

"It is true that Cats are not aggressive fighters, and any small Dog may sometimes tree them. A tree is their natural refuge, and any alarm may cause them to go up a tree. The same is true of the Cougar or the Panther, and probably the Leopard, and most of the Cat tribe; but when a Lynx desires to come down and go about other business, the Dog or man that stops him will have about all the entertainment he can use if he omits the use of firearms or other villainous devices. Give a full-grown Lynx a bush or two as cover, and the Dog that can kill him will have to use about all his courage and ability. I do not believe there is a 30-pound Dog that can whip a Lynx of the same weight on open ground.

"It is a mistake to consider these animals cowardly. Their nature is

[56] Forest & Stream, July 27, 1907, p. 132.

[57] Cal. Mamm., pp. 211–12.

[58] Forest & Stream, Sept. 14, 1907, p. 413.

subtle like that of all the Cats, and they are doubtless more peaceably inclined than most carnivores, but if we have in either America an animal that will make a hotter corner in proportion to his size, when forced to fight, I will have to be shown to admit it. They are cautious, subtle, and gentle, except when their ferocity is aroused by hunger or attack. Their teeth and claws are not long, but they are sharp, and the animal is about as active and sinewy as any that goes about on four feet. I consider him one of our handsomest, cleanest, and most intelligent animals.

. . . . . .

"While riding in search of stock with an old resident of the county, Mr. J. J. Bell, his Dogs treed a large Lynx. There were 4 large Dogs, and they would attack anything from Wild-hogs to bulls. The Cat was but 10 or 12 feet up the tree, and we dismounted, and Bell tried to prod the Lynx out of the tree with a pole. Before he could reach him, the animal sprang to the ground, evaded the 4 Dogs by dodging and fighting, and reached a second tree.

"We followed and Bell again tried to reach the Lynx with the pole. It sprang from branch to branch, without trying to go very high, and watching its opportunity, it again sprang down, and fighting the Dogs as it ran, got into a third tree, a very large oak. As we were now near a dense thicket of chaparral, Bell decided to go home for a rifle. He had to ride about 2 miles and return, and I was left to keep the Cat up the tree with the help of the Dogs. For a time the Lynx kept me busy from one side to the other of the tree, but after a while he crouched down and was content to stare me in the eyes, occasionally opening his mouth as wide as he could, and showing his teeth, of which he seemed to have a full set. In his threats, he made no sound, but seemed to intimate very clearly that he would bite if he had to do it, but that he would rather be left alone. When Bell returned with his rifle, he aimed to break a paw of the Lynx in order to let the Dogs finish him. He aimed a trifle too high and shot him through the heart, killing him instantly or nearly so. I wanted the Lynx to get away, but Bell believed they killed his Sheep and he encouraged his Dogs to hunt them.

. . . . . .

"When upon another ride with Mr. Bell, the same Dogs treed another Lynx. This one jumped out of the tree as we reached it and ran into a clump of vines and willows on the river bank. All 4 Dogs went in after him ferociously. We saw the Lynx lie back against the vines and fight the 4 Dogs off for a full minute. He then got deeper into the jungle, and after an hour or so of effort, all the Dogs came out, more or less scratched and torn, and beyond question defeated.

"Again while returning from a hunt after Deer with a friend we saw a Lynx drop from a tree into the trail a few yards ahead of us. My 2 Hounds, that would keep a Bear quite busy, sprang after it. The Dogs overhauled the Cat within a hundred yards and stopped it 4 or 5 times before it got to cover. Each time the Dogs were in such close quarters with the Cat, we could not get in a rifle shot, although we followed for some time. After chasing the Cat up a timbered mountain for a mile, the Dogs returned to us without having been able to tree the animal, and both of them had scratches and cuts to show that they had tried repeatedly at close quarters."[59]

H. L. writes: "The first Cat hunt I went on in Texas, we treed a Bobcat that probably weighed about 25 pounds. The tree was a mesquite, and the Cat was about 20 feet from the ground. According to custom, the boys were going to shoot him, when the tenderfoot exclaimed, 'Oh, don't do that; let me climb up and punch him out, and let him fight the Dogs, as we do the 'Coons back in the States.' Did they let me? Sure; I did not hear one word of objection.

"I easily climbed up to within punching distance, and with a 6-foot stick proceeded to punch the Bobcat that, according to a certain article, had never been known to attack a man, even when in order to make it sit up and look pleasant it has been teased with a short stick among the branches of its arboreal retreat. The Bobcat was facing me as I climbed up, and his remarks showed that he did not care for closer acquaintance. At about the third punch he jumped, and for a month afterward I could show proof that he did not jump toward the Dogs. Claw marks in both shoulders and teeth marks in my arm that I had interposed to protect my face and throat proved conclusively to my mind that they will attack, and that with very little urging.

"We sailed out of that tree together. I did not stop to climb down, just let go everything and sailed. Fortunately for me, the minute we struck the ground, the Dogs took a hand and relieved me of my most unwelcome companion.

"When I had time to look around, I thought the boys were having fits. They nearly rolled out of their saddles—we always hunted on horseback—laughing at my 'great act.' To them it was probably funny, but the next time we wanted a Cat, and we killed dozens of both the Bobcats and the Spotted Cats—Ocelots—during the winter, we sent for him with a pistol ball."[60]

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[59] Forest & Stream, Aug. 10, 1907, p. 212.

[60] As above, Jan. 14, 1911, p. 55.

Tamability

It sometimes happens that the fiercest animals respond most completely to the gentle methods of a tamer, especially when captured young. I never knew of a Wild-cat captured full grown that wasn't a very spitfire demon with a perennial growl and a physiognomy distorted with diabolic rage whenever approached. But I have seen a two-thirds grown Oklahoma Wild-cat that was tame and playful as a kitten. It rolled about on my lap, and made endless gentle attacks on my fingers.

But again we must beware of hasty generalization among animals of so much individuality.

Bachman writes of one which he secured when only 2 weeks old.

"It was a most spiteful, growling, snappish little wretch, and showed no disposition to improve its habits and manners under our kind tuition. We placed it in a wooden box, from which it was constantly striving to gnaw its way out. It, one night, escaped into our library, where it made sad work among the books . . . and left the mark of its teeth on the mutilated window sashes. Finally, we fastened it with a light chain, and had a small kennel built for it in the yard. Here it was constantly indulging its carnivorous propensities, and catching the young poultry, which it enticed within reach of its chain, by leaving a portion of its food at the door of its house, into which it retreated until an opportunity offered to pounce on its unsuspecting prey. Thus it continued, growing, if possible, more wild and vicious every day, growling and spitting at every servant that approached it until, at last, an unlucky blow as a punishment for its mischievous tricks put an end to its life, and with it to one source of annoyance."[61]

Then, again, according to C. H. Townsend: "W. E. Bryant of Oakland had a pair of tame Lynxes at his home in 1885, which were as affectionate and agreeable pets as could be desired, purring contentedly in true Cat fashion when their fur was stroked. This, however, is very unusual with Lynxes; they are bad-tempered and savage. One which was kept caged at the McCloud River fishery for 2 or 3 years was always the most vicious creature imaginable, snarling and glaring at every one who approached, with an expression truly satanic."[62]

The one from which I got the black tracks (see Plate XXXVIII) was as tame as a House-cat. It sat in my lap and purred like a kitten. Its tooth-and-claw play was rather rough at times, but it had no evil intentions.

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[61] Q. N. A., I, p. 14.

[62] Nat. Hist. Calif., Proc. U. S. Nat. Mus., 1887, p. 189.

PLATE XLII.—BOBCAT (*uinta*) POSES
Photographs by E. T. Seton

It was not quite fully grown, being but 10 months old. Its feet, however, were about the full size.

Use to Man

I wish I could translate into dollars and cents the pleasure it gives to many people when they meet with a Wild-cat or even find its tracks. This, however, is a sentimental and æsthetic pleasure, like that we get in a theatre, a book, or a good picture, and most folks do not yet know this, so I must seek other ways of making an appeal to their interests.

William Lloyd, the naturalist, states in his report on Texas, that along the Rio Grande and in Cameron County "most of the ranchmen will not allow the Wild-cats to be killed, for fear their ranches will be overrun with Wood-rats, Mice, and Rabbits." "Not only in this region, but farther north and east, this fear has been realized many times, in swarms of Wood-rats, Cotton-rats, and Rabbits, but the services of such predatory mammals as Wild-cats, Foxes, and Coyotes are not always recognized by the ranchmen."[63]

As fully detailed in the Coyote article, the destruction of some 84 fur-bearers, including 8 Wild-cats, on the 10½ square miles of the Spring Valley Water County, San Francisco, Calif., was followed by a *decrease* of the quail, indicating at least—if it indicates anything—that the Bobcat is not an unmitigated nuisance among game birds.[64]

An unexpected use for the creature is as a table-meat. Many a hunter has made a meal of this Cat. Merriam tried it and says he "can pronounce it excellent. It is white, very tender, and suggests veal more than any other meat with which I am familiar."[65]

Strange Incidents

The following delightful incident was contributed to *Fur News*, July, 1911 (p. 32), by W. L. Dougherty, of Steuben County, N. Y.:

"About 39 years ago, when I was a boy 8 or 9 years old, my mother sent me one day in summer to a neighbour about a half mile away on an errand, so of course I had to go; but it was as far across the fields as by the road. I went the road, but coming back I came across and had a small piece of woods to go through. Well, I got about halfway through them when I heard something that sounded like a Cat crying, and I looked around and spied it near a tree close by. I called 'Kittie, Kittie, Kittie,' but it

[63] Texas, p. 169.

[64] Cal. F. & G., Oct., 1922, pp. 230–31.

[65] Mamm. Ad., p. 41.

would not come nor move, so I started toward it, intending to take it home, as father was fond of that coloured Cat.

"I edged up to it and it backed off, so I started to go, but it started to come too, so I tried my luck again and got closer than at first, but it backed off as before. When I started on again, it also started and so I let it come up as close as it would and then tried again, and this time I got it by the neck and held on to it; I had the fight of my life to keep it, but I did and carried it home, and in the house, and told mother to shut the door, which she did, and then I let the Cat down.

"It tried to get out, but it could not, and finally it went in mother's bedroom, got under the bed, and stayed there until father came home at night.

"When he came home I told him to shut the door so as not to let the kittie out, for I had a nice one for him. He asked me where I got it and I told him. He asked where it was and I said under the bed. He got down and looked, and as soon as he saw those eyes he was scared, but said, 'Yes, a d—— Wild-cat,' and it was one, and about half grown at that. Well, it is needless to say that daddy killed it then and there."

"In 1873 or 1874," says Merriam, "I shot a grouse as it was flying along the north side of Mt. Tom, in Massachusetts. Scarcely had it touched the rocky slope when a Wild-cat sprang upon it from behind a neighbouring bush and, in a succession of rapid leaps, started up the side of the mountain with the grouse in its mouth. The contents of the other barrel of my gun caused him to change his mind as well as direction."[66]

When visiting Dr. David Starr Jordan in California, April, 1901, he showed me a remarkable photograph, the mummies of a Bobcat and a great horned owl locked in a death grip. The owl's talons were embedded in the Bobcat's head and one paw. His bill held the other paw. They were found under a cliff 40 feet high in the desert near Coalinga, Fresno County, Calif., by E. R. Graham. One or other of these enterprising hunters had caught a tartar. (See Plate XLIV.)

The Age It Attains

In Washington Zoo, they had a Montana Bobcat that was about 6 months old on arrival and lived there 15 years and 4 months. They had a California Bobcat which, adult on arrival, lived there nearly 14 years; and a Florida specimen that, though adult when it came, lived 13 years and 1 month. A male Bobcat from Virginia, received Feb., 1909, an adult on arrival, is alive and well, but blind since 1922, and obviously very old. In a

[66] Mamm. Ad., p. 41.

state of nature, he would have succumbed when his eyesight began to fail. Therefore, we cannot suppose the wild Bobcat to live more than 10 or 12 years.

Hunting the Bobcat

Throughout its wide range, the Bobcat is prized as a beast of the chase. And the hunt is carried on much the same as for a Fox, but it usually ends here by the Bobcat taking to a tree.

Bailey says that in the Big Thicket of Liberty and Hardin counties, Texas, "its tracks were seen in every muddy spot in roads and trails, and on damp mornings the Dogs started one about as soon as they got into the thicket. The Cat would rarely tree, but usually, rabbit-like, would run round and round in a limited circle in the thickest part of the swamp, depending on outrunning or dodging the Dogs. Cat-hunting is a favourite sport in this region, and the hunters usually take stands in open spots and wait for the Dogs to drive the game within shot. In one case I shot the Cat in front of the hounds as it passed me for the third time. It did not seem tired or much alarmed, but easily kept out of sight of the Dogs."[67]

Bachman gives a good description of hunting this animal in Dixieland. "The hunters," he says, "often run down the Wild-cat with packs of foxhounds. When hard pressed by fast Dogs, and in an open country, he ascends a tree with the agility of a Squirrel but the baying of the Dogs calling his pursuers to the spot, the unerring rifle brings him to the ground, when, if not mortally wounded, he fights fiercely with the pack until killed."[68]

This is indeed the finish of most Bobcats that are not taken in steel traps—a finish that old Æsop seemed not to have known, or he would not have presented his Cat that invariably found safe sanctuary when the fleet-foot game had failed—that is, climbed a tree to mock at the Dogs below.

[67] Texas, p. 170.

[68] Q. N. A., I, p. 6.

THE GENTLE MOTHER BOBCAT[69]

By Harry R. Walmsley

The river had been sinking lower and lower, day by day. In some places, it had narrowed until it could hardly be called a stream. The long drought and the hot, devastating winds had seared every green thing, except a small fringe here and there along the banks of the river. I gazed out over the parched and sizzling plain. The hot air came up from the ground in wavering tongues, like flames of fire. Day after day, month after month, the sun had poured out its rays from a sky of brass. Most of the wild things had migrated.

I sat looking across the desert valley toward a horizon mirage with phantom trees and lakes. Now and then a lizard ran over the sand or played tag with a brother or sister in the hot sunlight. High in the dusty vault overhead some vultures floated, miles apart, waiting and hoping for the stream to dry, so that they might feast on the lean Cattle that stood knee-deep in pools of water, listlessly switching their tails at imaginary flies. Glen, a beautiful red Irish Setter, lay curled up back of the stove in the shack, taking his regular siesta.

The shelter of a lone cottonwood tree gave me some feeling of comfort as I dozed, dreaming of the Northland's cool and shadowy pools. The very elements were asleep. Beetles buzzed about, making sounds like human voices. A black-and-white House-cat dozed on the window sill of the shack a few feet away. Danger seemed as far off as the snows of Alaska.

Suddenly a dark shadow flitted across the window sill, and, like lightning out of a clear sky, a bolt fell upon the Cat. A soft thud, a muffled squall, and she was gone.

I ran around the shack in time to see a ghost-like Bay-lynx carrying the Cat through the shrivelled sorghum plants and down the river bank. Knowing the timidity of the Lynx, I was startled at such a daring onslaught. I ran into the shack and picked up a coat containing cartridges, and a sawed-off shotgun that could hit every object within a radius of 50 feet. Calling Glen, I followed the Lynx to the river's edge. Here I paused and showed Glen the tracks left by the little pads in the soft mud.

"Wild-cats, Glen! Hunt 'em up!"

[69] By permission from Recreation, March, 1915, pp. 135–36.

PLATE XLIII.—BOBCATS (*uinta*) FIGHTING
Photographs by E. T. Seton

Glen was immediately transformed from a sedate and listless Dog into a frenzied hunting Wolf. The trail led across the soft mud of the drying river, up the opposite bank, through a half mile of mesquite brush, along a line of rocks, to a low cliff. At last Glen stopped, and began to bark furiously into a hole between the rocks. I crawled into the hole, pushing the gun in front of me ready for defense. About 4 yards back the hole widened out into a room 20 feet square. In the dim light at the far end I could see the Bay-lynx jumping from side to side of the cave. I covered her with the gun, just as my foot kicked something soft that gave out a nasty spit and snarl. Looking down, I saw 2 little blind Lynx kittens and a dead black-and-white Cat. Watching the old Lynx, and keeping her covered with the gun, I wrapped the kittens in the coat. While the old one snarled and swore, she showed no desire to come any closer.

I had long believed that House-cats were among man's greatest enemies on account of the havoc they created among the birds. Here was a Bay-lynx that evidently had evolved an especial fondness for the flesh of House-cats. If she produced more of her kind, man would be infinitely the gainer, so I concluded to let her live, provided that she made no attempt to interfere with my adoption of her babies. I gathered up the little spitting devils in fur, and crawled out backward. Glen had obeyed orders to watch outside, and now he was perfectly frantic to own one of the kittens; but I had a purpose in keeping them. I would raise them, and teach them to live on House-cats, and then take them back north and turn them loose.

I built a nice little house for the kittens, and fed them milk from sponges. Although they were young and blind, they fought furiously whenever I touched them. I wondered how they had learned to recognize the man-smell as that of an enemy.

That night, as I looked out of the window, I saw, in the yellow moonlight, the mother Lynx slip quietly around the shack, and then I heard her mourning up and down the river bed. I felt sorry for her, and ashamed of my cruelty; but I did want those little, spitting, swearing imps.

The next day, they sucked the sponges frantically, snarling and spitting all the while.

Great masses of clouds gathered all that day, and lightning came, flash upon flash, with crashes of thunder that reverberated from hill to hill, like volleys of artillery. But not a drop of rain. Then, as darkness settled down, the skies opened. The rain came down in torrents, and with it much hail. Through the roar of the storm, I heard the wails of the grieving mother Lynx, mourning her lost ones. My heart smote me, and I determined to give them back to her the next day.

Plate XLIV. The Bobcat & Horned Owl.—a double tragedy found under a cliff at Coalinga Calif.

The dawn came. The river was bank full and running swiftly, carrying down brush and Cattle. The rain came harder and harder, till the whole plain was a sea. Across the river, where the Pecos Valley Railroad was in course of construction, came a hand-car, manned by 2 workmen. They stopped opposite my shack, and yelled that the Eddy Dam had given way, and I would have to run for my life.

I threw the box containing the mother Lynx's darlings upon the roof of the shack, called Glen, got in the basket of my private trolley, and crossed the river to the hand-car. Then we worked hard to get out of danger. We stopped at another place, 5 miles down the valley, and picked up a man and his wife. The water was gaining on us, but we were headed toward a broad valley where the flood would have fewer terrors for us. The crest reached and passed us, leaving us safe but not dry.

A week later, the water had subsided and I went back to where my shack had stood. Only a sea of mud met my gaze. All landmarks within 50 miles had disappeared. My poor little Lynx babies, no doubt, met an easy and painless death, but to this day I feel a shameful sense of guilt whenever I think of them. I hope the mother was saved. May her tribe increase.

As the years passed, I often thought of the poor little Lynxes nailed up in a box, rolling over in a flood of water; and these thoughts only made stronger the conclusion to which I had been forced—that all wild things should remain wild; that it is cruel and unjust to deprive them of their liberty and pen them up for ignorant people to gaze at and annoy.

I took every opportunity of getting acquainted with the Bay-lynx, as well as with other animals; and I learned to realize more and more that, in our ignorance of their motives, we place a totally wrong interpretation upon their actions, their seeming cowardice and timidity. I learned that, far from being a coward, the Lynx could be brave enough when bravery was justified. During years of camp life in the West, I came to understand that it was wisdom alone that caused the Lynx to avoid collision with man. He had simply acquired the hard-won knowledge that, for him, all argument with the man-animal meant serious trouble, and probably death.

The Pecos Valley incident, however, had made me long for a chance to force a Lynx into a position where it would believe it had to fight. I felt the keenest desire to watch its process of reasoning.

THE PEACE-LOVING FATHER BOBCAT[70]

By Harry R. Walmsley

. . . One day in March, . . . I was tramping along the banks of the Kansas River. The cold had held on with discouraging intensity up to a few days previous; but now, the spring had opened in a mad rush to meet the summer. I climbed a hill to watch the sun sink to rest in the crimsoned waters of the river. I had just a few miles to go, and the soft glow of the evening and starlight would be more pleasant than the glare of a surprisingly fierce March sun. A yellow-bordered butterfly flitted by—surely a harbinger of spring. The liquid warble of a bluebird came from no certain place. I was watching two flickers doing a wild dance upon the limb of a dead oak tree, when a movement out on a sandbar about three-quarters of a mile distant arrested my attention. Wondering what it could be, I watched the animal shape as it moved slowly along the sand. It seemed to be examining something very intently. Looking more carefully, I was surprised to recognize the old padfooted shadow—a Bay-lynx! I slipped down the side of the hill, and worked my way through the thick growth of willow, grape, and cottonwood, between the hill and the water, toward the Cat. When I reached the edge of the wood growth, I peered cautiously through. I had stalked the Lynx merely to find out what he was doing on the sand, but I saw at once that at last I had cornered him in a situation such as I had often pictured in my mind, one in which he would simply have to fight. For there he was, away out at the tip of a long, narrow bar, that reached into the river 300 feet. He seemed to be scratching up and eating something, probably snails or clams that the warm sun had brought into activity.

The arm of sand started from the bank about fifty feet from me. The Lynx's back was toward me, and his ridiculous stub of a tail was working nervously. I stepped out of cover, and made a dash for the neck of sand. I reached it and was well out on the long arm before the Lynx realized that he was not alone. With a startled snarl, he came toward me, evidently to get back to land. Then he changed his mind, and retreated to the far point of the bar and stood at bay. Here was the reward of my years of waiting.

The river was full of floating ice, and the temperature of the water was

[70] By permission, from Recreation, March, 1915, p. 136.

about the same as that of the ice. I knew the Lynx would as soon meet a .45 bullet as that water. I knew that if I walked up to him, he would either have to jump on me, or jump into the water, and that the thought of either act was paralyzing to him. I walked slowly toward him, and though unarmed, felt safe, for two reasons: first, because I had always had an utter contempt for the attack of wild animals, and secondly, I knew that, if attacked, I could jump into the icy water, where the Lynx would not follow.

As I moved toward the Cat, he backed slowly to the water's edge, and stood snarling and spitting. He glared at me with wide-open eyes, and did a little dance as he felt the water touch his feet. I noticed that he was a fine large male. I could not help admiring his beautiful, white, pointed teeth. At a distance of 12 feet, I stopped and examined him thoroughly. He snarled and spat, and talked furiously, bluffing, as all North American Cats do. I moved toward him. He stopped his noise and crouched, but it was not good judgment, for his hindquarters sank into the cold water.

He came to an erect position with a snarl, and look of hurt surprise that made me sympathize with him. Slowly I advanced toward that pained and glaring face. He tried to back, but only picked his feet up and put them down again—the water was still there. I was within 6 feet of him. I knew that the climax was at hand. Two more steps, and we would contact.

With a final snarl, he slid sideways into the ice-water, and swam half a mile to the other bank. There he pulled himself out, and disappeared in the brush. I knew then that the Bay-lynx would never hunt trouble with man. But I have felt sorry for him during the years that have passed since. Did he leave his family or his lady-love on the other side of the river? If so, how did he get back again?

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LIFE VII—THE GRAY-WOLF

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Wolf, Gray-wolf, Big Wolf, Timber-wolf, Lobo, Lobo-wolf, Loafer, Cattle-killer, Buffalo-wolf, Buffalo-runner Mexican Wolf

Canis mexicanus Linnæus

(L. *Canis*, a Dog; *mexicanus*, of Mexico, because first known from there)

Canis mexicanus Linnæus, 1766 Syst. Nat., ed. 12, vol. I, p. 60.
Type Locality—Southern Mexico

French Canadian, *Loup gris, Louve grise.*
Chipewyan, *Noón-dee-a.*
Cree, *May-hee'-gan.*
Sauteaux, *My-in'-gan.*
Ojibway, *My-in'-gan*, or *Kit'-chi My-in'-gan.*
Yankton Sioux, *Song-toke-cha Tung-ka.*
Ogallala Sioux, *Shunk'-ah Mah-nee'-tu.*
Mexican, *Xoloitzcuintli* (Hernandez) or *Lobo.*

The genus *Canis* is composed of the true Dogs. They have long pointed muzzles, long legs, long bushy tails, and pointed ears; have 4 toes on each hind-foot and 5 on each front, but the innermost of the 5 toes is very short and small, and raised so that it does not touch the ground; the claws are blunt and non-retractile.

The teeth: Inc. $\frac{3-3}{3-3}$; can. $\frac{1-1}{1-1}$; prem. $\frac{4-4}{4-4}$; mol. $\frac{2-2}{3-3}=42$

Assuming that the Wolf covering the highlands of Central Mexico is the same as described by Hernandez in 1628 and properly named by Linnæus from his description in 1766, we must use this name as the oldest Wolf name in North America, and all of our forms of the large Wolves become subspecies of *mexicanus*, unless we make *mexicanus* and all the rest subspecies of the Old-world *Canis lupus.*

The skull of *mexicanus* is relatively short and wide, with slender muzzle and light dentition when compared with the Great Plains Wolf from Montana.

Size. Adult ♂: Total length, $62\frac{3}{8}$ in. (1584 mm.); tail, $16\frac{1}{8}$ in. (410

mm.); hind-foot, 10¼ in. (260 mm.). Skull: Basal length, 8 7/16 in. (214 mm.); zygomatic breadth, 5¾ in. (146 mm.) .

Colour. As shown by Biological Survey specimens from Mexico, this is a relatively small, dark, richly coloured Wolf, showing the usual Wolf pattern as seen in the Buffalo-wolf and Timber-wolf, but with rusty-yellow sides, nape, muzzle, legs, and tail. The back and top and tip of the tail are heavily sprinkled with black, while the lower parts are mainly ochraceous with little or no white.

Young. A pup (*nubilus*) taken by George F. Dippie at Gleichen, Alta., March 22, 1901, and presumably less than a month old, is of a dull umber-gray, darker on the lower back and on the tail; paler and buffy on the head; a large white spot on the breast; with a curious blackish mask on the muzzle, reaching to the eyes and taking in the chin. This is the usual colour of the very young. As they grow, the colour fades to a dull yellowish. When about 3 months old, the puppy coat is shed and the light-gray coat acquired. In the young Coyote, the muzzle is tawny or yellowish brown.

Size of male (*nubilus*). A good-sized Gray-wolf that I caught at Clayton, Colfax County, New Mexico, Dec. 13, 1893, was 5 ft. 2 in. (1575 mm.) from nose-tip to tail-bone tip; of this, its tail was 16 in. (406 mm.); shoulders, 27 in. (686 mm.); girth of neck, 18 in. (457 mm.); girth of chest, 28½ in. (724 mm.); girth of forearm, 8¼ in. (209 mm.). Its weight was 102 lbs.; other ♂s caught in the region weighed 90 and 78 lbs. W. R. Hine weighed the Winnipeg Wolf, a ♂ (see p. 313) at 104 lbs. The Friedensfeld (Man.) Wolf, a ♂, weighed 76 lbs.

T. P. James, of Clayton, N. M., assured me that in the fall of 1892, he killed a huge Wolf that turned the standard scales at 150 lbs.

The largest Wolf of which I have details was captured by G. W. Myers, of Billings County, N. D., in 1902. It weighed 168 lbs., and measured 7 ft. 10 in. in total length (see p. 315). These, however are extreme, and the weights taken in New Mexico more nearly represent the normal ♂.

Size of female (*nubilus*). A ♀, taken near Clayton, N. M., Dec. 29, 1893, was 4 ft. 7½ in. long (1410 mm.); tail, 12 in. (305 mm.), but imperfect; hind-foot, 10 in. (254 mm.); height at shoulders, 25 in. (635 mm.); weight, 75 lbs. Another ♀ weighed 80 lbs., and a third, a poor one, only 55 lbs.

Colour. The skin of the Colfax County, N. M., ♂ is now before me. It is, in general, a dull, yellowish-white, becoming nearly pure white on cheeks, chest, and inside of hind-legs. The upper part of the muzzle, crown, and outer side of each limb and the entire plantar surface of each foot is tinged a clear pale sienna. On the backs of the ears, the sienna is much deeper and stronger. Beginning on the muzzle between the eyes are many

PLATE XLV.—BLANCA'S HEAD. LIFE STUDY, 1894

black-tipped hairs which give a grizzled look. These increase in length and number, and continue over head, upper neck, shoulder, and back to the basal third of the tail, where they end in a black spot 1 in. wide and 2 in. long. After this, the tail hairs are faintly tipped brownish black; the tail itself ending in a dark tip of blackish hairs, with a few white ones interspersed.

The under-fur or wool is brownish gray on the under parts, becoming much darker on the limbs and much browner and darker on upper parts generally.

The dark spot on the tail near its base is formed by a curious tuft of stiff, black-tipped hairs, without woolly under-fur; it marks the place of the usual tail-gland. The claws are dark horn-colour.

Compared with a number of Coyote skins taken at the same place, there is no absolute difference. The Coyotes are more strongly tinged with sienna above, and more nearly pure white below. Also, their under-fur on the back is tipped with a rich brown instead of dark gray-brown. But they have the same black tuft over the tail-gland, and there is little but size to distinguish them when living.

The above colour description of the Gray-wolf agrees exactly with Merriam's colour description of the Coyote quoted on p. 356.

Colour, however, is a poor diagnostic. In Manitoba, we find gray, black, and white Wolves. Florida Wolves are nearly always black, and Arctic Wolves nearly always white, but there are plenty of exceptions, and both black and white individuals are distributed among the Gray-wolves of the Plains.

Tyrrell, who went northward through the Barren-grounds on his journey from Athabaska Lake to Chesterfield Inlet in 1893, says that all Wolves "seen for some time had been of the white Arctic variety, which do not travel together in packs like those of the timber country." But at Dubawnt Lake, a band of Wolves were encountered, all of which were gray.[1]

On April 30, 1902, when Hanbury's party was near latitude 67° between Lake Garry and Ogden Bay, Hubert Darrell, his companion, encountered a band of 16 large Wolves. Thirteen of these were ordinary dirty white, 2 were nearly black, and 1 pied.[2]

Races

The following forms have been recognized. Although distinguished here only by the external features of size and colour, it must not be forgotten that they have skull characteristics that are much more important.

[1] J. W. Tyrrell: Across the Sub-Arctics of Canada, 1894, pp. 98–99.

[2] Preble: N. A. F., No. 27, 1908, p. 214.

mexicanus Linnæus, the typical form. T. l., southern Mexico.

lycaon Schreber, 1776, Säugethiere, pl. 89; the dark brown, eastern forest form. T. l., eastern Canada near Quebec.

nubilus Say, 1823, Long's Exped. Rocky Mountains, I, p. 169; the big gray form of the interior Plains. T. l., near Blair, Washington County, Neb.

occidentalis Richardson, 1829, F. B. A., I, p. 60; the gray form, the largest of all. T. l., Upper Mackenzie Valley.

gigas Townsend, 1850, Journ. Acad. Nat. Sci., Phila., II, p. 75; the big red form of the Puget Sound region. T. l., near Vancouver, Clark County, Wash.

rufus Audubon & Bachman, 1851, Q. N. A., II, p. 240; a small red Wolf. T. l., Texas.

pambasileus Elliott, 1905, Proc. Biol. Soc., Washington, 18, p. 79; the big gray Wolf of the interior of Alaska. T. l., Sushitna River, near Mount McKinley, Alaska.

floridanus Miller, 1912, Proc. Biol. Soc., Washington, 25, p. 95; the small black southern Wolf. T. l., 12 miles south of Palatka, Putnam County, Fla.

tundrarum Miller, 1912, Smiths. Misc. Coll., 59, No. 15, p. 1; the white Wolf of the Arctic regions. T. l., Point Barrow, Alaska.

In general habits they are much alike. The only differences are those imposed by different surroundings and opportunities. Therefore, I shall consider the Big Wolves as one superspecies, but give a separate chapter to the last, the White or Arctic Wolf, because its peculiar surroundings have established some peculiar habits.

Fur

The skin of the Gray-wolf is split open flat like that of a Beaver, while Coyote skins are cased like Fox and Mink. The fur is rich, full, and beautiful. It makes a fine robe, but is not very durable as a rug. It is prime from November 15th to April 15th, and brings from $1.00 to $10.00, according to quality.

At the London annual fur sales held at Lampson's, March, 1906, there were 15,843 Wolf skins disposed of. The highest price realized was 64 shillings ($15.36) each, for two unusually fine blue skins, but 32 shillings ($7.68) each was considered a high price for 5 extra large fine skins of ordinary colour; and first-class skins varied, according to size, from 2 shillings (48 cents) to 30 shillings ($7.20).

PLATE XLVI.—GRAY-WOLF

Drawn by E. T. Seton, in 1892, for *Forest and Stream*, and reproduced by courtesy of that publication

Athabaska River, a mile below the Landing; it was chasing a Coyote. The track showed that the race had lasted for about a mile. When Nagel came up, the Coyote was killed and partly devoured. He tried to shoot the Wolf but it ran off. Knowing it would come back, he put the Coyote's body into the river, left a poisoned bait on the spot, and got the Wolf next morning. It was a male, "8 ft. 4 in." from nose to tail (skin). The natives said it had lived there for years, covering the same country.

In Dec., 1906, an Indian named Shirma shot a Wolf near Smith Landing, breaking its hind leg. In the end of February, Murdo Mackay trapped a Wolf with a broken and healed hind leg at a place 40 miles south of Smith Landing. As there is very little shooting done in this district they believe this to have been the same Wolf.

In Feb., 1907, at a place 3 miles west of Smith Landing, a Wolf was trapped by the toes but escaped. In March he was trapped again, at a point beyond Fort Smith, 15 miles from his first trapping, this time by the other foot, and again escaped. He had now lost toes on each foot and was well marked. In the end of March, T. Anderson saw his fresh tracks near a house, 8 miles north of Fort Smith. He was shot at Fort Smith about the last of May of the same year.

Enos A. Mills says of the Wolves: "They spend their life in one locality. This has a diameter of 15 or 20 miles. To a certain extent, its area and form are dependent on the food supply and the topography. One Wolf that I know of had a home range that measured 40 by 10 miles."[4]

It is the opinion of all hunters whom I have consulted, that the summer range of a Gray-wolf is less than 20 miles across. In winter, however, it may be doubled by the scarcity of food, but at all times there is a region that it recognizes as home. Yet the great Custer Wolf, as will be seen later, had a known range of 40 by 65 miles.

Unlike the Deer, the Wolf, so far as known, does not have two home-regions, one for summer and another, entirely distinct, to which it migrates for the winter; *i. e.*, the Gray-wolf is a wide ranger but non-migratory.

Haunts

As one views and considers the vast continental range of the Gray-wolf, one realizes that it is equally at home in the semi-tropics of lowland Texas and on the rugged islands of the Polar Sea. It is found everywhere within the territory marked—open plains, dense forests, rolling uplands, or matted cane-brakes—competent and triumphant, except in the water, on the thirsty, burning desert of the Southwest, and among the wind-swept peaks of Goatland.

[4] Watched, p. 155.

Ancient Numbers

The map shows that in primitive times the Wolf ranged over about 7,000,000 square miles, the widest range in North America of any large land mammal. All of Canada and Alaska and all of the United States, except California and Nevada, were well supplied with Wolves; but not in equal distribution. Wolves were certainly most numerous in the region where their food most abounded, that is, the Buffalo Plains of the West, the Deer-teeming forests of the Mississippi Valley, and the middle states of the Atlantic seaboard—the central and temperate regions of the range, its great heart.

The ordinary Wolf litter, as will be seen later, is 7 or 8. The natural enemies that prey on the cubs are eagles, parasites, disease, and last and chiefest, winter famine, which starves all and drives the stronger to devour the weaker, especially in the northlands of deep snow. The average number to leave the den with the mother is probably 5. The winter bands which have been noticed are usually mother, father, and 3 or 4 young. In the late winter, when the parents leave them, it is doubtful whether there is usually more than one cub surviving of the brood; and against these the warfare of man is most effective. But the young do not breed until their second year; this reduces the percentage of increase by nearly one half. Yet it seems that, given food enough for the winter, the Wolves can add 20 per cent. to their number every year, and will do so unless in some way destroyed. Therefore, in regions of abundant food, such as the Cattle country, I argue that the Wolves can stand an annual drain of 20 per cent. by man; and 30 or more per cent. will make a steady diminution—which figures I use in calculating the Wolf population.

When Audubon went on his voyage up the Missouri in 1843, he found White Wolves "extremely abundant. . . . Some days while ascending the river, we saw from 12 to 25 Wolves."[5]

South Manitoba was part of this well-populated region, for it also was Buffalo country. In the early days when the Buffalo swarmed on the Red and Assiniboine rivers, there were hundreds, possibly thousands, of Gray-wolves in Manitoba. Alexander Henry writes, Oct. 4, 1799 [Junction of Park and Red rivers], "Wolves are very numerous. They go in large

[5] Q. N. A., II, p. 159.

droves and keep up a terrible howling day and night,"[6] and his fur reports of the region give: 1800–01, 204 Wolf skins; the following years they numbered, 256, 801, 360, 690, 862, 420, and 68. These, however, included both Gray- and Prairie-wolves or Coyotes, probably equally divided, because Coyotes were scarcely worth marketing then, and most were from Pembina Hills. This gives in round numbers 250 Gray-wolves each year from the Pembina region, which is about 40 or 50 by 60 miles, or 2,500 square miles. There were other traders in the region, and Wolf skins were not much sought after, so that the actual kill was much larger than the skins would seem to show. There were at least double as many Wolves killed in the region as are shown by the trade returns, or roughly, 1 for every 5 square miles. But they could stand the drain, which I take it shows that the number killed was less than 20 per cent. of the total, making it possible that in this populous region there was a Gray-wolf to every $2\frac{1}{2}$ square miles.

In the East, we have one or two helpful records. Dr. W. J. McKnight gives the history of George Smith, a noted Pennsylvanian hunter, born 1827, died 1901 at the age of 74, and says:

"It was in Elk County, Pa., that he did some of his most effective hunting; and it was here that he killed 150 Deer, 13 Bears, and 13 Wolves in one year.

"The following is a record of the game he killed during his lifetime:

"14 Panthers, 500 Bear, 30 Elk, 3,000 Deer, 500 Catamounts, 500 Wolves, and 600 Wildcats. He had killed 7 Deer in a day and as many as 5 Bears in a day."[7]

How many such hunters there were we can only guess. In the best hunting grounds of the Northwest, a hunter to every township (36 square miles) was considered about all it would stand, so that Pennsylvania with its 45,000 square miles, might have 1,000 such hunters, probably more, for the State of Ohio assembled 50,000 Squirrel-hunters for its army in 1862. If, then, George Smith could kill 500 Wolves in his 50 years of hunting, 1,000 such hunters might easily kill 500,000 Wolves in Pennsylvania at the rate of 10,000 per annum. This slowly cleared them out, so must have been over 20 per cent. of their number, and might argue a total Wolf population of 40,000 in Pennsylvania, or roughly one Wolf to every square mile.

Corroborative evidence is afforded by items from the Adirondacks, a region much less thickly populated with game of all kinds. These are taken from "Trappers of New York," by J. R. Simms, 1850, p. 271: Thomas Meacham of the town of Hopkinton, St. Lawrence County, N. Y., died a few

[6] Journ., p. 112.

[7] Forest & Stream, Jan. 17, 1914, p. 94.

weeks ago, according to St. Lawrence *Republican* of Jan., 1850. "He kept an exact account of the game killed by him which amounts to the following: number of Wolves, 214; Panthers, 77; Bears, 219; Deer, 2,550."

In the same work it is stated that Nathaniel Foster settled in Herkimer County, N. Y. . . . because of its abundant game. He is believed to have killed more game than any other man in the State in the same period: "76 Deer in one season; 96 Bears in 3 seasons; 25 Wolves in one year" (p. 176). On p. 177, it states that one year when a liberal bounty was paid on Wolves he got $1,250. If it was all Wolf money this represents 300 Wolves, as the bounty was 20 shillings a head (p. 147).

Greatly reduced though their numbers are in America to-day, "from 1901 to 1905, both years inclusive, 498,000 Wolves [pelts] were taken in Canada and the United States."[8] If half a million pelts were secured, it certainly meant the destruction of 1,000,000 Wolves, for old and young are killed at all seasons. This means 200,000 a year were killed then, but it seemed to be slowly reducing the numbers, therefore was more than 20 per cent., which might argue less than 800,000 Wolves on the range at that time.

An important item is contributed by the editor of *Forest & Stream*, Oct. 9, 1909, p. 576. He states that 1,581 Wolves were taken in Minnesota during the 4 months ending Oct. 1, 1909. That State has in round numbers 80,000 square miles. Carlton County headed the list with 153 Wolves and 80 cubs. This county has 856 square miles. The Wolf population cannot stand this drain; therefore, more than 20 per cent. are being taken, but the species is not disappearing rapidly, so that I believe the 233 taken in Carlton is about one half, or represents a Wolf population of 1 to 2 square miles. But we know that Wolves are far from being in primitive numbers in Carlton County, so that the Pennsylvania estimate of 1 to the square mile is, if anything, too low.

We have figures referring to Wyoming that help us in getting an estimate of the Wolf population in primitive days.

R. M. Allen, the manager of the Ames Cattle Company (Nebraska), writing to *Recreation*, Sept., 1897, p. 207, says his range is the northeast part of Crook County, Wyo. (5,435 square miles). Since the spring of 1895, they have killed on it about 500 Gray-wolves, and they seem as numerous as ever. This argues at least 1,250 Wolves in that county, or 1 to every 4 square miles. Only half of the State is equally good Cattle (and Wolf) country; therefore, at this rate, it might have 10,000 Gray-wolves.

[8] G. W. Bartlett of Algonquin Park: The Menace of the Timber Wolf, Toronto Saturday Night, Aug. 11, 1917.

PLATE XLVII.—THE LEADER OF THE PACK
Life study by Ernest Thompson Seton
The property of the State of New York, reproduced by courtesy of Governor C. E. Hughes
Exhibited in Salon of 1895

Emerson Carney states[9] that Wyoming paid bounties on 4,281 Gray-wolves during the years 1897 and 1898; that is, 2,140 each year. Since they continued numerous, this presupposes a minimum population of 8,000 in the State at that time.

Wyoming paid bounties for the killing of 20,819 Wolves in the 11 years prior to 1908.[10] As at least a half of those killed are not found, we may claim that 40,000 Wolves were killed, or 3,600 each year. Since their numbers bore the drain very well, it would prove the existence of at least 12,000 or 15,000 Gray-wolves in that State alone, with its 97,000 square miles of territory.

Vernon Bailey's investigations cited above (pp. 8 and 9) showed that in the Cattle ranges of the Wind River country, Wyoming, where Wolves were fairly numerous, he found 20 breeding dens in use within a space of 100 miles square; that is, 20 families of 10 Wolves each. But this was in poor Wolf country; half of it was mountains. Also it was evident that he found only about half of the Wolf dens, which, with the troops of bachelor Wolves, easily trebled the estimated population of that region, making 600 a safe estimate, at which rate, Wyoming might have had 6,000 Wolves in 1907, and over treble as many in the Buffalo days, or 20,000. Wyoming's extent and conditions are repeated about 30 times on the central Wolf range. This would argue 600,000 Wolves, and at least as many more in the outlying regions, which is 3 times as great, and would give not less than a round 1,000,000 as a fair estimate of the Big Wolves in primitive days. We have already seen reason to believe that in Pennsylvania, the Wolves went as high as one to every square mile. Pennsylvania has 45,000 square miles. The entire Wolf range, as we have seen, is 7,000,000 square miles, therefore 2,000,000 Wolves is a conservative estimate of the original numbers.

[9] Forest & Stream, Feb. 25, 1899, p. 145.

[10] Wolves, p. 10.

Numbers of Wolves To-day

The map shows that the Wolf is totally extinct to-day in Nova Scotia, New Brunswick, Quebec south of the St. Lawrence, Ontario south of Lake Simcoe, all of New England, the Middle Atlantic States, the Ohio Valley, the middle Mississippi country, and the lower Missouri region. That is, it is extinct in the part of its range where formerly it was most numerous. Though this area is barely one fourth of the total, there can be little doubt that it contained at least one half of the Wolf population. In the remaining part, the inevitable process reduced the Wolves by half; that is, the Wolves in the year 1900 were not more than one quarter of their primitive number. Since then they have been very greatly reduced, though in some localities they are holding their own.

Wyoming. "In the upper Green River Valley of Wyoming between the Salt River and Wind River mountains, Wolves were apparently just as numerous in March, 1906, as on a previous trip that I made through the valley 13 years before. Fresh tracks were seen on the snow almost every day, usually of Wolves in pairs, but in one case of a band of 9. Between March 24 and April 21, 1906, 4 dens, containing 32 Wolf pups, were found, with 2 old Wolves at each den; and evidently there were 2 or 3 other dens in the valley."[11]

Arkansas. When I was at Blythesville, Ark., Feb. 6, 1920, I made all possible inquiries among the hunters, and was told that Wolves were still plentiful. Some said there were hundreds in the State; 500 is a guess that was approved.

Missouri. Wolves have reappeared in Central and Southern Missouri, and according to J. S. Ligon, of the Biological Survey, in August, 1923, were "very numerous and in many localities have made Sheep-raising impracticable.[12]

"The capture of 1,723 Wolves is reported from 39 National Forests, which comprise an area of 72,760 square miles. The surrounding country included may amount to as much more, making an area of about 145,520 square miles, to which the reports relate, or about one tenth of the total area inhabited by Wolves in the United States."[13]

[11]Wolves, 1907, p. 8.

[12]The Survey, Nov. 15, 1923, p. 3.

[13]Destruction, p. 5.

Since poison is largely used, the actual kill is about double or 3,000 Wolves. Their numbers are dwindling under this drain; therefore, since their annual increase is only 20 per cent., this must be more than one fifth, but not much, because they are dwindling slowly. Call it 10,000 Wolves, and on the total area 100,000, to which add as many more from Canada and Alaska, giving a Wolf population of 200,000 in 1908.

During the 5 years, July 1, 1915, to June 30, 1920, the Biological Survey reports the killing of 2,846 Wolves in the States west of the 100th meridian, to which must be added 17 in Arkansas and 73 in Oklahoma, a total of 2,936, not including what were poisoned, which would certainly double the number.[14]

In 1918, the reports show that the Wolf was rapidly disappearing. The 1907 killings in the Cattle States, *i. e.*, those west of the 100th meridian, totalled 1,723 (see above), and in 1918 had fallen to one half, or 849.[15] Trapping is carried on more vigorously than ever. The argument from these facts and figures is that in all the Cattle States to-day there are less than 3,000 Gray-wolves. Twenty-five years ago, I estimated the number at 500,000.

In Mexico, it is believed that the Gray-wolf is nearly, if not quite, extinct.

According to Gower Rabbits, "The Wolf is not found all over Newfoundland. For the past 20 years, very few have been reported in scattered localities. More than 20 years ago, 8 Wolves were seen in one bunch near Gaff Topsails It was reported 2 years ago, that 2 were seen in the vicinity of St. Georges, and last winter 2 crossed over the Birchy Lakes going south, and tracks of 2 were seen at the Doctors Hills. None have been reported on this side of Newfoundland for several years. Some years ago, a few were reported between Bonavista Bay on the east coast and Fortune Bay on the south, but none have been reported on the Avalon Peninsula for 40 years."[16] These localities are spotted on the map.

In Nova Scotia, the Wolf is extinct.

In New Brunswick, also, it is reckoned extinct, but a straggler was taken in 1921–22.

In Quebec they are exterminated in the St. Lawrence Valley and southward; but from other parts, according to the Government Reports, a total of 91 were killed in 1921–22.

In southern Ontario, they are exterminated except in the Algonquin Park. During 1911, the "Rangers killed 47 Wolves in Algonquin Park

[14] W. B. Bell: U. S. Dept. Agri. Yearbook, 1920, p. 299.

[15] An. Rep. Biol. Surv., 1918, p. 3.

[16] Personal letter, Nov. 14, 1923, from Secr. G. & I. F. Board, St. John's, Newfoundland.

[1,800 square miles] that were accounted for. Fully as many more must have fallen victims to poison from the amount of bait taken. Two thirds of the number brought in were females."[17]

In Algonquin Park, in 1922, I learn from the Rangers that 75 to 100 Wolves are killed and secured each year, probably as many more destroyed and never found, and yet they continue numerous as ever. This presumes a Wolf population of 600 in the Park; that is, one to each 3 square miles. Nowhere else in timbered Canada are they so numerous, because nowhere else are Deer so abundant. Yet in the vast hinterland of North Ontario 1,151 were killed in 1921–22, according to Government report.

Manitoba. Very rare, except in the North Woods. There in nearly primitive numbers, but never abundant. In 1909, I figured that there were 50 to 100 pairs of Gray-wolves in Manitoba. In 1921–22, the government report gives 2,505 killed, and yet there must be at least as many left.

Saskatchewan has more Wolf country and may have twice as many Wolves. In 1921–22, there were 3,354 killed and still they are numerous.

In the Cattle country of Alberta, where the conditions and population are nearly the same, 1,590 were killed in 1921–22.

In British Columbia that same season, 306 were killed.

This leaves the great hinterland of Alaska, Yukon, Mackenzie, Keewatin, Franklin, Ungava, Labrador, totalling 3,000,000 square miles, in which primitive conditions continue, and in which (omitting Alaska) only 453 were killed in 1921–22.

According to the explorers J. W. Tyrrell, Buffalo Jones, and others, who crossed the Barren-grounds in the '90's, the Wolves appeared in droves, apparently existed in hundreds.

The fur reports show that several thousand skins are exported each year without reducing the stock. It would be very conservative indeed if we put the Wolf population of the country north of lat. 49° at 100,000.

The fur returns for 1906 showed that about 50,000 American Wolf pelts were marketed in London, but probably three quarters of these were Coyotes.

According to the official report furnished me by the Commission of National Parks, Dominion of Canada, the Wolves killed in Canada during the seasons 1919–20, 1920–21, and 1921–22, were 10,608, 5,316, and 9,451 respectively, besides about three times as many Coyotes.

These were the Wolves for which bounties were claimed or skins marketed. But it is well known that poison is generally in use and the victims seldom found, so that the kill would surely be double, or 20,000 per annum.

[17] Mark Robinson, Ranger: Forest & Stream, July 6, 1912, p. 10.

PLATE XLVIII. WOLVES

No. 1.—Den of Arctic Wolf near Lake Aylmer, N. W. T., Aug., 1907. Photograph by E. T. Seton

No. 2.—Young Gray-wolves born in Philadelphia Zoo. Photograph by R. D. Carson

Nos. 3, 4, 5 & 6.—Buffalo Wolves (captive). Photographs by E. T. Seton

So far as can be judged, the Wolves in the North are holding their own. Therefore, not more than 20 per cent. are being killed, which means a Wolf population in Canada of 100,000.

Although probably exterminated in the devastated area that I have arbitrarily left white on the map, we get a surprise from time to time by discovering scouts and prospectors of the species in their one-time ranges, for the Wolf is a far-traveller and possessed of the spirit of enterprise.

There are also odd pairs of Wolves maintaining an existence in rough corners where it is generally supposed that they have been exterminated, so that it is not easy to say which are survivals and which new arrivals.

The Remnants in the United States

Maine. In Maine the Wolf is extinct.

New Hampshire. Prof. C. F. Jackson of New Hampshire College, Durham, N. H., writes: "The last record in my possession of the Timber Wolf is that of a specimen taken in the White Mountains in 1887."[18]

Massachusetts. According to W. P. Eaton, a Wolf was killed at New Marlborough, Mass., Dec. 2, 1918. The species, he says, is coming back into Green Mountain.[19]

New York. In the Adirondacks, where once the Wolf was so plentiful, the last survivor seems to have been the one killed by Reuben Cary, trapper, at Brandreth Lake, Hamilton County, in the November of 1893. The specimen is now in the collection of General E. A. McAlpin at Brandreth Lake. (For details, see later section on "Trapping.")

Bachman says: "We examined a specimen of the White Wolf killed in Erie County, N. Y., about 40 years ago."[20]

The last Wolf of Niagara County, N. Y., was killed near the town of Wilson about 1840, by a party of hunters led by Peter Haner. The specimen is now in the possession of Karl Brong of Lockport, N. Y.

The same winter, a Gray-wolf was killed and Walter Brown killed a black one near Ransomville, N. Y.[21]

Pennsylvania and New Jersey. In 1903, S. N. Rhoads published his "Mammals of Pennsylvania and New Jersey." In this he gave several pages of records dealing with the last Wolves known to have lived in these States, and says (p. 149):

"Wolves were once commonly and uniformly distributed over the en-

[18] Journ. Mamm., Feb., 1922, p. 14.

[19] Harper's Mag., Feb., 1920, p. 342.

[20] Q. N. A., II, p. 161.

[21] Forest & Stream, April 15, 1911, p. 575.

tire limits of the two States. They were apparently exterminated in Pennsylvania within the last 10 or 15 years, but more recent accounts seem to indicate that a remnant of the typical Alleghanian animal may still exist in the mountains separating Westmoreland and Somerset counties, Pa. In New Jersey, they had been exterminated so early, even in the northern wilds, that I can get no data as to the last survivors. They were approximately exterminated in New Jersey in the early decades of the 19th Century. As one was killed in Wayne County, in 1887, being driven from New York State by Dogs, it is quite likely that a stray wanderer may have come from the same sources into the Sussex County mountains, as late as the middle of the century from New York or Pennsylvania."

Any records since 1903, therefore, are of unusual interest

Pennsylvania. The killing of the last Gray-wolf in Pennsylvania is recorded by H. F. Coon, in *Forest & Stream*, June 1, 1907, p. 854. The farmers of Brush Mountain, near Hollidaysburg, had lost 40 or 50 Sheep during the 3 years previous. On the morning of May 13, 1907, Jacob Royer saw what he took for a very big Gray-fox killing a lamb. Assisted by S. C. Long and James R. Moore, he killed the creature and found it a veritable Gray-wolf, an old female. She was very gaunt, weighed about 60 pounds, though 5 feet 5 inches in total length. The specimen is now in the Carnegie Museum at Pittsburgh. Prof. W. E. Clyde Todd vouches for the accuracy of the record.

New Jersey. On June 12, 1920, when at Lake Mashipakong, N. J., I talked with many residents and native sportsmen, with a view to a local list of mammals. Charles Robinson assured me that a year ago, he got a good look at a Wolf of some kind in the woods. By "some kind," he meant either Coyote or Timber-wolf. But such records are increasingly doubtful, since Police Dogs and various hybrids have appeared among us.

Dixieland. The map shows that Wolves are yet found in Florida, Georgia, Alabama, Mississippi, Tennessee, North Carolina, and West Virginia.

The following note shows that the Wolf is still to be reckoned with in some of the oldest settled regions.

"News has been received here to the effect that Wolves have been exceedingly bad near Rayville, La., and several calves and Pigs have been killed by them. W. J. Coleman with 2 packs of trained Dogs went out and hunted down a large Wolf. The hunters in and near Rayville will keep up the hunt until they have destroyed all the Wolves in that section. On account of the Wolves, the farmers have experienced much difficulty in raising Hogs, calves, and chickens."[22]

[22] Forest & Stream, April 8, 1911, p. 534.

When I was at Blythesville, Ark., Feb. 6, 1920, I inquired of the numerous hunters. All agreed that the common Black Wolf is plentiful there even yet.

Tennessee. Benjamin C. Miles writes from Brownsville, Tenn.: "There are several of us who would like an answer through your columns as to whence comes a species of large Gray-wolf which in the last 4 years has taken possession of our river bottoms and seems to have gone to permanent housekeeping. Twenty-five years since the small Black Wolf was exterminated, and now, as though dropping from the sky, comes this gray monster that none of our Dogs can successfully tackle; in fact, for a Dog to leave the pack a few yards in a chase is always fatal. This creature has little fear of man, and renders his range useless as a place to raise stock or Hogs."[23]

North Carolina. I have received a long and detailed account of a she-Wolf that terrorized Sassafras Forks, Granville County, N. C., about 1875. When killed with her brood, it was believed the end of Wolves in that region.

Wisconsin. Lloyd Breck sends to *Forest & Stream* of Aug. 22, 1908 (p. 297), a photo of a 100-pound male Timber-wolf killed 20 miles west of Merrill, Wis., in November, 1907. He also secured the female. Ten or twelve came about his camp on Prairie River.

Michigan. W. B. Mershon of Saginaw, Mich., is responsible for the statement that a big Timber-wolf was killed at a place about 3 miles north of Henderson. He had been raiding Sheep in Saginaw County for 6 weeks. He was killed by John Lottridge, Dec., 1909.[24]

Oregon. In the *Oregon Sportsman* for May, 1914, Stanley G. Jewett gives a long account of Timber-wolves in that State, from which the following is taken:

"From data now available, the range of the Northwestern Timber Wolf (*Canis gigas*) in Oregon is restricted to the west slope of the Cascade Mountains from Clackamas County on the north to Jackson County on the south. No record has been obtained of this species occurring east of the divide in the Cascade Mountains or west of the Willamette Valley. . . . N. W. McMillen [who captured a pair of black Wolves near Three Links Camp on Clackamas River, Feb., 1914] estimates that there are about a dozen Wolves that range over the territory in the vicinity of his winter camp, about 25 miles above Cazadero on the Clackamas River."[25]

[23] Forest & Stream, Aug. 31, 1895, p. 182.

[24] As above, Jan. 1, 1910, p. 17.

[25] As above, July 11, 1914, p. 541.

To this Jewett adds in the *Journal of Mammalogy* (Feb., 1923, p. 54): "On Nov. 2, 1915, a large male of the Cascade Timber-wolf (*Canis gigas*) was shot by Mr. H. W. Fisk in Logan Valley, Grant County, Oregon. The skin, which was of the tawny type, was presented to the State Game Commission during December, 1915, where it was examined by the writer. Logan Valley is a small mountain valley at about 5000 feet altitude in the Blue Mountains, and is surrounded by heavy forests of almost a clear stand of yellow pine. As this is the only known occurrence of this Wolf east of the Cascade Mountains in Oregon, I thought it well to place it on record. *Canis gigas* at present ranges from Indian Creek in Jackson County, Oregon, north to the Clackamas River in the county of the same name, and as far as known only along the west slope of the Cascade Mountains. There are probably not over a hundred of these animals in the State to-day."

Vancouver Island. The real but obscure uncongeniality of the West Coast is further evidenced by the following from J. W. Lowther of Victoria, B. C.:

"I have often wondered why we see so little of the Timber-wolf on Vancouver Island. The amount claimed annually in bounties for their destruction proves that very few are killed. As far as I know, they have no natural enemy and I suppose that they are practically immune from disease. As Deer are pretty plentiful on the island, they should never lack food, so that why they do not increase to be a pest is a mystery to me."[26]

California. A number of cases of Gray-wolf have been reported, but all on investigation turned out to be big specimens of the Mountain Coyote (*Canis latrans lestes*) with one exception. Dr. Joseph Grinnell writes me from the Museum at Berkeley, April 25, 1923: "We have the skull of a veritable Wolf taken within the eastern boundary of California the past winter."

[26] Letter, Dec. 28, 1922.

PLATE XLIX.—SLEEPING WOLF
Oil painting by E. T. Seton. Exhibited in Paris Salon, 1891

Marriage Customs

The mating season of Gray-wolves begins about the end of January and may last into the first week of March, differing according to the region; the colder the country is, the later.

In the Algonquin Park near Lake Nipissing it takes place in February and early March. At that time, the Ranger, Mark Robinson, tells me that he has overheard terrific battlings between the males and seen the record of these fights in the snow.

Does the Gray-wolf pair? This is so important in the natural history of monogamy that I give evidence at length.

Ordinary Dogs, we know, are promiscuous, but domesticity is notoriously bad for the morals of animals; here, therefore, the argument of analogy would be unsafe. Dr. Woods Hutchinson, in an important article on "Animal Marriage,"[27] points out the promiscuity of the Dog as anomalous and maintains the superiority of monogamy as an institution. "A monogamous race," he says, "will, in the long run, defeat a polygamous," and then he claims that monogamy is the rule in all the higher animals. Hearne says of the Wolves on the Barren-grounds: "They couple in spring and generally keep in pairs all summer."[28]

Miles Spencer, an observant fur-trader, at Fort George, Hudson Bay, thoroughly conversant with the Wolves of that region, maintained that the male assists the female in caring for the young.[29] The Wolf-hunters in New Mexico tell me that when they find a Wolf's den, *two* old ones are sure to be hovering about, and in January I saw there at least one case of a male being deeply devoted to a certain female. A good father is a good husband among animals. Bailey says: "Men who have made a business of hunting Wolves for the bounty, assert that they are usually able to shoot one or both of the old Wolves at the den by watching the trails, or hiding near the den early in the morning before the Wolves return from the night's round. These statements are fully corroborated by my own experience. While watching dens in Wyoming, I could easily have shot the male who was doing sentinel duty; for although he watched from a high point, from which he

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[27] Contemporary Review, Oct., 1904.

[28] Journey, 1795, p. 362.

[29] A. P. Low: Expl. James Bay, Can. Geol. Surv., 1888, App. III, p. 76 J.

could see a man long before being himself seen, still in his anxiety to decoy me away, he often came within rifle range."[30]

Bud Dalrymple, the Dakota Wolver, testifies that the father is always in attendance, and helps in raising and protecting the young.[31] With abundant evidence, therefore, we may state positively that Wolves always pair, at least for the breeding season.

Life-long Union

How long does this ideal condition last? For that season or for life?

Probably for life. I have several times seen a male and female Wolf together at a time when the sexual passion was dormant; and yet the male showed the female more attention than he would have done had she been simply a smaller male. This points to permanent partnership.

In the London Zoo, at present (Dec., 1904), is a pair of Wolves, officially called "Lobo" and "Blanca." The male is from western Texas, the female from Arizona; they are good, typical examples of the Gray- or Buffalo-wolf of those high plains.

They have been there for 3 years and are supposed to be 5 years old. They bred last year, producing 9 cubs, and this year 8. The father has always been kept away from the young, so it is not known whether or not he has any parental feelings. But at all seasons, the male shows kindly consideration for the female, a permanent feeling of friendship, even when the sex urge is quite dormant. The element of chivalry in this is discussed later. All these facts point to union for life.

D. A. Thornbury, Superintendent of Schools, Grinnell, Ia., writes me thus:

"In the latter part of October or early November, 1886, in Mitchell County, Iowa, while we were hulling corn, my brother and myself saw 2 Gray-wolves come out of the woods. One of them was carrying a dead Cottontail in his mouth. They passed within 50 yards of us, and watched us as they passed. They seemed to know that we had no gun."

The fact that 2 Gray-wolves, *unhungry*, should be travelling together in fall shows a friendly alliance most easily explained by a life attachment between the pair.

There is, however, some evidence for the other view. The Alaskan sled Dogs are known to be domesticated Wolves; all are much mixed with wild Wolf blood; some even are Wolves captured when young. Captain Dick Craine, who spent 9 years among them, owning and handling in that time

[30] Wolves, p. 22.

[31] Gray Wolf, p. 12.

about 200, tells me that he has several times known a pair of half-Wolf train Dogs to mate and remain together as mates *until the pups were well grown*, after which they parted. Two very marked cases happened at the same time. In these the father took an interest in the pups and the mother allowed him to approach them, but warned all others away. He never saw the father feed the pups, but the mother often did so by disgorging.

From these cases he infers that the Wolves mate for one season, but not for life.

Dr. Woods Hutchinson, in his paper on "Animal Marriage," says: "There is a general impression among field-naturalists and trappers that many of these animals, having once paired, come together again in the succeeding seasons, although they may be widely separated during the intervening part of the year. Indeed, some of them positively declare that the union among Wolves, Foxes, Panthers, Lions, and Seals is practically for life. In few species, however, does it terminate until the expiration of the period required for the young to become able to shift for themselves. In some of these, like certain Wolves, the father practically disappears during the nest period of the young, but joins the family again when the cubs are able to run."[32]

A degree of this latter custom is seen in Foxes, Coyotes, and several other carnivores. It seems that in all these creatures there is a deep-laid instinct to leave the mother quite alone during parturition and until the young are some days, or in some cases weeks, old, after which the father is allowed to rejoin the family. This, it will be remembered, is closely paralleled by the practice of many tribes of human savages.

As a general argument, mating customs are so deeply rooted as to be very uniform in a given family; thus all the true pigeons pair, all the true Deer are polygamous; and every evidence, direct or collateral, I can find on any of the true Dogs, except the case of the Alaskan team Dogs (in domestication), points to perfect and permanent *monogamy as the rule*.

Den

The nursery den is either a natural cave, a hollow log or stump, or a hole in the ground dug out by the parents themselves. Sometimes they enlarge a Badger hole, and in any case the bed is not far from the entrance.

"In the western United States," says Bailey, "Wolves breed mainly in valley and foothill country or in low mountains. For breeding dens they choose, if possible, natural cavities or washed-out hollows on south slopes of rocky or bad-land ridges. There is usually a high point not far from the

[32] Contemporary Review, Oct., 1904, p. 493.

den, where the old male stands guard during the day. In timbered regions Wolves breed in hollow logs or such cavities as can be found."[33]

The Ranger, Mark Robinson, says: "They have no regular dens in these parts [Algonquin Park], a bed being selected in a hollow log or under a root of upturned tree, or in niches in rocks. These places form a home for the little chaps for a few weeks, after which they follow the mother, living upon the carcasses of Deer previously slaughtered."[34]

The Gray-wolf apparently does not line its nest. Roland D. Carson, of the Philadelphia Zoo, writes me concerning those that bred in the gardens:

"The females dug a hole in the earth, but made no attempt at lining the nests, and when hay and other materials were put in it to form a bed, they were promptly thrown out."

As the lining habit is instinctive in the kinds that practice it, we note with interest that many animals are tormented with parasites which harbour and breed among the nest material, so that lining is a dangerous comfort.

The Wolvers of Dakota and the West have given us an insight into the Wolf mind by their efforts to locate Wolf dens.

Bud Dalrymple says: "About the 5th to the 10th of April is a good time to commence to look for Wolf dens. Take a saddle Horse and ride back to the head of the big ravines, or if in the Bad Lands country, go over near the wall and look closely for Wolf tracks. A good place to look for them is along the creek bed or draw, and if you see several tracks leading in the same direction—tracks made at different dates—follow them. They will lead you to a den. You may have to go a mile, or maybe 4 or 6 miles, and you may have to leave your Horse and go on foot in order to get over the Bad Lands buttes. When you get within a quarter of a mile of the den, there will be a beaten trail made by the old Grays, and you will have no trouble in locating the den, unless the ground is very dry and hard. Keep this in mind: When you are following a Wolf trail to a den, she will go in a direct line, regardless of creeks, buttes, etc., and if the trail goes up a ravine and swings around and goes down another one, you may as well stop, as you will find no den."[35] In other words, in going home, the Wolf's course is direct, while on leaving home, she is hunting and winds in all directions.

In the same vein, Bailey says: "Except for the tracks of an occasional pack of bachelor Wolves which are wandering through the country in the breeding season, it is safe to assume that every track either goes to or comes

[33] Destruction, p. 8.

[34] Forest & Stream, July 6, 1912, p. 10.

[35] Gray Wolf, p. 20.

PLATE L.—LIFE STUDIES OF WOLVES

By E. T. Seton. That in the centre and the two toward the right-hand upper corner are Gray-Wolves from the Buffalo Plains. The rest are from Europe

from a den. When a track is found, the direction of the den can often be told by the lay of the land and the time when it was made. Since the Wolves hunt mainly at night, to find the den, a track made in the evening should be followed backward, and one made in the morning, forward. As the tracks approach the den, they often gather into well-worn trails or runways, which become so conspicuous near the den that no mistake can be made as to its location."[36]

Corroborative evidence is found in the following by J. A. Shaw of Binford, Wyo. After a late snowstorm in April, which resulted in about 5 inches of snow, he went out Wolf-trailing with a good foxhound.

"We had gone about 7 miles from the ranch, when we struck the trail of a very large Wolf, and back trailing it for a short distance, I found where the Wolf had lain down. As I have spent about 10 years in this business, this told me that I was going the wrong way. I started in the other direction, and as the going was exceedingly rough, I tied my Horse to a tree and went forward on foot.

"I had trailed the Wolf about a mile when, suddenly, the Dog began to growl and show signs of uneasiness, and at this I began to look closely for the Wolf, and suddenly I came upon the den. It was situated in a rough pile of rocks, facing the south.

"It was now about noon. I stood there quietly for a moment, and then, to my great surprise, the old Wolf came out of the den. She had not seen me yet, and not being over 15 feet from her, I killed her with a shot from a .30 United States Army rifle. The male, hearing the shot, jumped up about 50 yards away, but the ground was so rough that I got only one shot at him. We worked all the afternoon at the den, but did not get to the pups; but the next day we went back and got 5 young ones."[37]

"Now," says Dalrymple, "when you find the den and are sure the pups are born, close up the den at once. If there is no material close at hand to close up the hole, take your vest or coat and hang it in the entrance of the den, so if the old Wolf is in the den she will not come out and get away. Even a handkerchief will keep her from coming out, before dark, anyway. Most of the Wolf dens are large enough so a small man can crawl in them.

. . . . . .

Now, if the old she-Wolf is in the den, she will get as far back as she can; and if the pups are small, you may come to them first, and a sack is a handy thing to put them in. They will not hurt you, even though quite large,

[36] Wolves, p. 24.

[37] Forest & Stream, June 4, 1910, p. 892.

and the old Wolf will not harm you until you wound her, which, most likely, you will have to do, as nine times out of ten she will have her back to you and you will not be able to shoot her in a quick-kill spot, but she will soon back up and turn around with her head toward you; and you had better shoot her quick, for any animal, when crowded in a hole and wounded, is apt to bite. . . .

"If you will hide yourself well near the den and keep a sharp lookout, about sundown or real early in the morning, you may get a shot at one of the old Grays."[38]

The Young

According to all observers, the period of gestation is 63 days in the Gray-wolf, as in most, if not all, of the true Dogs. In the Berlin Zoo, according to Dr. O. von Heinroth, the following have been observed: 62, 64, 66, and 63 days.[39]

The usual date for birth of the young is between March 9 and April 15. The earliest records are as follows from Fontinelle, Wyo.: March 5th, 4 pups about 10 days old, evidently born about February 23rd; another brood March 10th, both in 1908 and recorded by Bailey.[40]

In the National Zoo at Washington, litters have been born on March 23d, 27th, 29th, and April 2nd, 4th, 5th, 6th, and 9th, May 1st, and August 31st.

Those in the London Zoo (parents from Texas) were born March 28th; all the four litters bred in the Philadelphia Zoo were born in March and April, the earliest March 18th, the latest April 19th. Even in the Red River Valley they are born about the same time, as is attested by the notes given later from Henry's "Journal."

The young number from 3 to 13, but are usually 6 or 7, the average being over 7.

In Algonquin Park, Ontario, on April 10, 1908, Henry Callaghan, the Ranger, shot a female Wolf that had in it 5 whelps, all haired and ready for birth. Mark Robinson was present and examined mother and pups.

Blanca, the female in the London Zoo, already described, is credited with having produced 42 pups in 5 litters between 1901 and 1909.[41]

A Wolf-hunter, W. M., writes from Colles, Alberta, that along the boundary line between Montana and Canada, in the spring of 1897, he found

[38] Gray Wolf, pp. 20–21.

[39] Zoöl. Beobachter XLIX Jahrgang, Frankfurt, 1908, p. 16.

[40] Destruction, p. 3.

[41] Forest & Stream, May 8, 1909, p. 732.

6 Gray-wolf dens, with a total of 43 pups, the largest litter 11, the smallest 5.[42]

Vernon Bailey found a total of 32 pups in 4 dens in Wyoming.[43]

The total of these 16 litters, then, is 122, an average of $7\frac{5}{8}$ to each.

When born, the young are blind and almost naked, and, like young Dogs, their eyes are not fully opened until the ninth day.

W. H. Blackburne reports that he has watched several litters in the National Zoo at Washington, and found their eyes opened a little on the seventh day and fully opened on the ninth. Carson says that the only litter of the Wolf pups that he was able to watch closely "did not get their eyes opened till the thirteenth day." Possibly these were prematurely born.

The following from Henry's "Journal" has a bearing on all aspects of the subject before us (pp. 174–75):

[Park River Post on Red River] "April 7, 1801. One of my men brought in 3 Wolves of this year which he had found in a hole in the ground; they sometimes have their young in a hollow log or stump. . . . Another of my men brought in 6 young Wolves he had found in one hole."

Maternal Instinct

"Shortly after birth and long before their eyes were open," says Carson, "the mother-Wolf [in the Philadelphia Zoo] would come to the front of the enclosure with one of her pups in her mouth, sometimes returning for another one or two, but all were never brought out at one time; one was carried about for a while and then returned. This was generally done when the keeper was in the back passage or adjoining cage. Nervousness from fear of harm to her babies seems, in most cases at least, to have been the cause of this habit."[44]

The maternal instincts of the she-Wolf are of a high order. Carson, above quoted, remarks:

"We have no instance of a Gray-wolf killing or eating her young, but Prairie-wolves in our Zoo have not only killed their young, but eaten them when they have died from other causes."

When I was at Sidney, Ohio, March, 1902, I met an old hunter who related a curious and interesting story that illustrates the motherliness of the she-Wolf. About 20 years before, when he lived in Wisconsin, a bounty of ten dollars each was put on Gray-wolves, and he spent a good deal of time hunting them. One day he saw a Wolf come to the river to drink. He shot

[42] Recreation, July, 1898, p. 45.

[43] Wolves, p. 8.

[44] Letter.

and killed it, then found that it was a female suckling young. He searched many days for the nest but could not find it.

Two weeks later he shot another female Wolf coming out of a hollow log. She also was suckling young. He crawled into the log and found 13 Wolf pups of two different sizes—6 very small ones, 7 much larger. She had but 6 teats in commission, so he concluded that this she-Wolf had rescued the young of the first female he had shot.

The Good Father Wolf

"The old male helps feed the pups," says Dalrymple, "same as the female, while the pups are small, but I think he does not go in the den. I have killed several old females in dens, but have never found an old male Wolf in a den, though I have shot and also caught them close to a den."[45]

Most Wolvers find that the father Wolf has a special lookout, whence he can at all times keep watch and ward over the family.

A touching incident that shows the loyal devotion of the male at the most trying time, *i. e.*, near younging time, is thus recorded by the hunter quoted above:

A "year ago last spring a pair of Wolves fell into my traps, and the female Wolf had her litter of pups after getting in the trap."[46]

A further evidence of the father's interest in the young is seen in this trapper stratagem:

"A very good way to catch either the male or female Wolf is to take a dead Wolf pup, stake it down some 50 or 75 yards from the den and set a No. 4, or still better, a 4½ Wolf trap, on each side about 2 feet away from the pup. I have always had good luck in getting the old Wolf this way. The most trouble in this case is the turkey buzzard. They are regular dead animal scavengers, and will likely get in the trap before the Wolf comes around."[47]

What a commentary is invited by all this! Our only chance of trapping and destroying these wonderful creatures is by playing on their noblest emotions—love of their young or devotion to each other.

Growth of Young

The young ones of the Philadelphia Zoo would whine like puppies as soon as they were born, and the mother would answer and call them in the same manner.

[45] Gray Wolf, p. 12.

[46] As above, p. 24.

[47] As above, p. 12.

PLATE LI.—GRAY-WOLF SCRATCHING HIMSELF
Life studies by E. T. Seton

As soon as they could see, they began to play together like the young of the domestic Dog. All their growth-stimulating exercise comes to them in the form of play.

At from 3 to 4 weeks, according to their vigour, all would come out daily, never at night, and sit or play in the sun about the door of the den, but were ever ready to scurry in again at the slightest alarm. According to Lee Hampleman, my Rocky Mountain guide, the young ones in Colorado first began to follow the mother for short distances from the den in June when they were about 3 months old, though farther north they might not begin this life for another month.

Feeding the Young

The question how they are fed has been much discussed; and sifting down the evidence of many observers, it may be considered sure that they are simply suckled for about 6 weeks, during which time the father has little to do with them. Now the mother begins to *disgorge* solid food for them. Many observers say that they have watched closely but never saw anything of this. Carson, however, states positively and conclusively:

"At 5 or 6 weeks they begin to eat the food disgorged for them by the mother, and later, when they wanted food of this kind, they would jump at her mouth, sometimes several at once, until she supplied them."[48]

The father soon becomes active, not disgorging, so far as we know, but bringing fresh game to the den. On this point D. A. Thornbury, Superintendent of Schools, Grinnell, Ia., also writes me: "My father has many times found in the mouth of the hole in which he took some young Wolves, bodies of Rabbits and chickens, and in one instance he took from the hole the partly eaten body of a lamb."

Of the above-mentioned brood of 8 young Wolves in the London Zoo, 4 were raised by a collie foster mother, and they became very tame as well as unusually fine specimens. The rest were left with the mother; 2 died. The others grew up, but were weaklings and very shy and wild. The collie was fed on dog-biscuit, the mother Wolf on raw meat, the only food she would touch.

"After the collie-raised 4 were put in a paddock by themselves, they also grew wild and timid, except one, which for some unknown cause remained tractable and dog-like. This is a most interesting case of individual variation in temperament, and suggests how breeds of domestic Dogs have

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[48] Personal letter.

been brought to their present condition of tameness by breeding from stock artificially selected for that attribute."[49]

"One was sold to a member of the Society, who lives in the country, where the young Wolf has all the liberty of a Dog. It follows a carriage, attends garden parties, and is a favourite with children. It is larger than either of its parents."[50]

The following year, Doctor Drewitt wrote me, June 25, 1905: "Blanca has had another litter of puppies, and, as usual, those that were brought up by a collie wet-nurse were tame, and those which were nursed by the mother, wild. All the puppies had lead-coloured iris."

Their great diversity of disposition is early shown. Some are meek and playful as puppies, some are wild and fierce from the beginning.

"One litter of 8 pups taken from a cavity under a large boulder when they were about 6 weeks old, fought as fiercely as their strength and puppy teeth would admit, but they could not cut through my buckskin glove. There is no real danger from the young while they are still in the dens, unless blood poisoning should result from a scratch of their teeth.[51]

Miles Spencer says that the young are suckled for 2 months after birth in the region about Hudson Bay.[52]

Carson, however, writes me: "It is probable they would nurse for 5 or 6 months, but as a rule we took them from the mother before they were entirely weaned. The weaning was very gradual, and toward the last the mother would snap when they attempted to suckle her."

Enemies of the Young

At this time the only enemies that the young Wolves have to fear are eagles, man, insects, and disease. Eagles very often pick up the youngsters as they play around the den door; man destroys the mother, and digs out the pups if he can locate the den; parasites, insects, and disease also are to be dreaded, but of course, winter famine is their direst scourge.

Hearne makes some remarks which show the Northern Indians and the Wolves on a very friendly footing.

The Wolves, he says, "always burrow underground to bring forth their young; and though it is natural to suppose them very fierce at those times, yet I have frequently seen the Indians go to their dens and take out the young ones and play with them. I never knew a Northern Indian hurt one

[49] R. I. Pocock in letter.

[50] Dr. J. D. Drewitt in letter.

[51] Wolves, p. 24.

[52] A. P. Low: Expl. James Bay, Can. Geol Surv., 1888, App. III, p. 76 J.

of them; on the contrary, they always put them carefully into the den again; and I have sometimes seen them paint the faces of the young Wolves with vermilion or red ochre."[53]

In August the young are so far grown that they begin to follow the mother about in her hunting expeditions, and the den is abandoned. By this time the doorway is littered with the bones, fur, and feathers of the game brought home by the parents.

Education of the Young

The education of the cubs now begins in earnest. The chief means is example. Whether consciously or not, on the part of the teacher or of the class, there can be no doubt that it is by seeing the mother do, or not do, that the little ones learn much that is necessary to their success in life. Thus she inspires them with terror of a trap by showing her own terror of it; no matter whether conscious or unconscious, *this is teaching*. The same is true, I suppose, of all the ideas that modern Wolves have; that is, the ideas so recent that they have not yet had time to become ingrained as instinct.

A glimpse of young Wolves in their training is afforded by the following incident told me by Guide Stotz of Algonquin Park, Aug. 5, 1922. When tramping along the railroad at sundown east of Joe Lake, not far from Camp Ahmek, near milepost 307, on July 29, 1922, he caught sight of a band of 12 Wolves and heard others. He saw them pull down a Deer at the edge of the bush. Then they broke into a terrific howling. Stotz was so alarmed that he climbed one of the low telegraph poles, but they did not come near, so he came down and went on. He thinks there were 16 Wolves, but Mark Robinson, who went later and examined the signs, etc., thinks it was the work of but one family, composed probably of father, mother, and 5 or 6 whelps.

Further illustrating their travels under guidance of the mother is the following by Bud Dalrymple, though in this case, alas, the mother proved to be tragically unwise.

"Several years ago," he says, "I caught 2 Wolves in one setting of traps at the same time, and these traps were set on a trail not over 2 feet apart. This was in October, and one was an old female, the other a spring pup, although full grown."[54]

Carson says: "They are still puppy-like at one year, and hardly full grown until 18 months old; even then they did not have the fully adult look. The females in the Philadelphia Zoo did not come in heat till they were 2

[53] Journey, pp. 362–63.

[54] Gray Wolf, p. 24.

years old." It is known that they do not breed till they are 2 years old. That is, they are like Dogs in this respect.

This agrees with observations made on the Wolves in the London Zoo. It is likely, therefore, that the Gray-wolf is not fully mature until its third year. Thenceforth the female breeds once each year while in vigour; that is, probably, till her ninth or tenth year.

Age

A Dog is supposed to be old and useless at 10 years. Ulysses' Dog which attained to 20 has been the talk of ages. A Wolf, being a wild Dog, should have about the same allotted span. That this is the case, the following records in the National Zoo at Washington show:

"A male Gray-wolf (*Canis nubilus*), born in the Park, March 29, 1905, died at an age of 16 years, 3 months and 5 days, on July 4, 1921. . . . A female Woodhouse's Wolf (*Canis frustror*), born in the Park April 17, 1911, died Jan. 7, 1922, at an age of 10 years, 8 months and 21 days."[55]

Wolf Packs

There can be little doubt that the ordinary Wolf pack seen in summer and autumn is merely the family under guidance of the parents, though on rare occasions, two families will unite for a time.

The most I ever saw in a band was 5. This was in northern New Mexico, Jan., 1894. The most I ever heard of in a band was 32. This was in the same region and was doubtless a winter asemblage of 4 or 5 families.

Dalrymple says: "I have seen 11 in one bunch, and I once saw where 14 of them went right by camp, their tracks in the snow showing just how many there were."[56]

Ranger Mark Robinson of Algonquin Park says that the Wolves are not often in packs, any more than the family group. But on Dec. 22, 1908, he saw a pack of 14 Wolves, and in March, 1918, he came on the tracks of 22 that were travelling together.

On May 23, 1921, he heard a mother Wolf and her cubs pull down a Deer in a swamp near Canoe Lake. He is quite sure of it, though he could not get near enough to see in the thick alders. He heard the mother's howls and the little yelps of the cubs, as well as the "blats" of the Deer. This must have been a very early litter, as they do not usually run with the mother till late summer; or possibly a bachelor pack.

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[55] Ann. Rep. Smiths. Inst., 1922, p. 93.

[56] Gray Wolf, p. 22.

PLATE LII.—BLOOD ON THE TRAIL
Wolf study by E. T. Seton

As already noted, the Wolf does not breed till it is 2 years old. Consequently, bands of immature, unmated Wolves are sometimes seen in spring and summer. These are known as the bachelor packs.

Sociability

The fact that these foot-loose, carefree wanderers keep together is an evidence of sociability. Indeed, the Wolves are the most sociable beasts of prey. Not only do they gather in bands, but they arrange to render each other assistance, which is the most important test of sociability.

The large packs are apparently formed in winter only. I think, further, that this species is not gregarious in the sense that the Antelope and Wapiti are. The packs are probably temporary associations of personal acquaintances, for some temporary purpose, or passing reason, such as food-question or mating instinct. As soon as this is settled, they scatter. No doubt these same individuals are ready to reunite as soon as a new occasion requires it, and would resent the presence of a total stranger. This I take to be true sociability.

An instance in point was related to me by Gordon M. Wright of Carberry, Man. During the winter of 1865, he was logging at Sturgeon Lake, Ont. One Sunday he and some companions strolled out on the ice of the lake to look at the logs there. They heard the hunting cry of Wolves, then a Deer (a female) darted from the woods to the open ice. Her sides were heaving, her tongue out, and her legs cut with the slight crust on the snow. Evidently she was hard pressed. She was coming toward them but one of the men gave a shout which caused her to sheer off. A minute later, 6 Timber-wolves appeared galloping on her trail, heads low, tails horizontal, and howling continuously. They were uttering their hunting cry, but as soon as they saw the Deer, they broke into a louder, different note, left the trail, and made straight for her. Five of the Wolves were abreast, and one that seemed much darker was behind. Within half a mile they overtook her and pulled her down; all seemed to seize her at once. For a few moments she bleated like a Sheep in distress; after that the only sound was the snarling and crunching of the Wolves as they feasted. Within 15 minutes, nothing was left of the Deer but hair and some of the larger bones, and the Wolves fighting among themselves for even these. Then they scattered, each going a quarter of a mile or so, no two in the same direction, and those that remained in view curled up there on the open lake to sleep. This happened about 10 o'clock in the morning within 300 yards of several witnesses.

As will be seen in the section on "Playfulness," the Wolf has some social amusements.

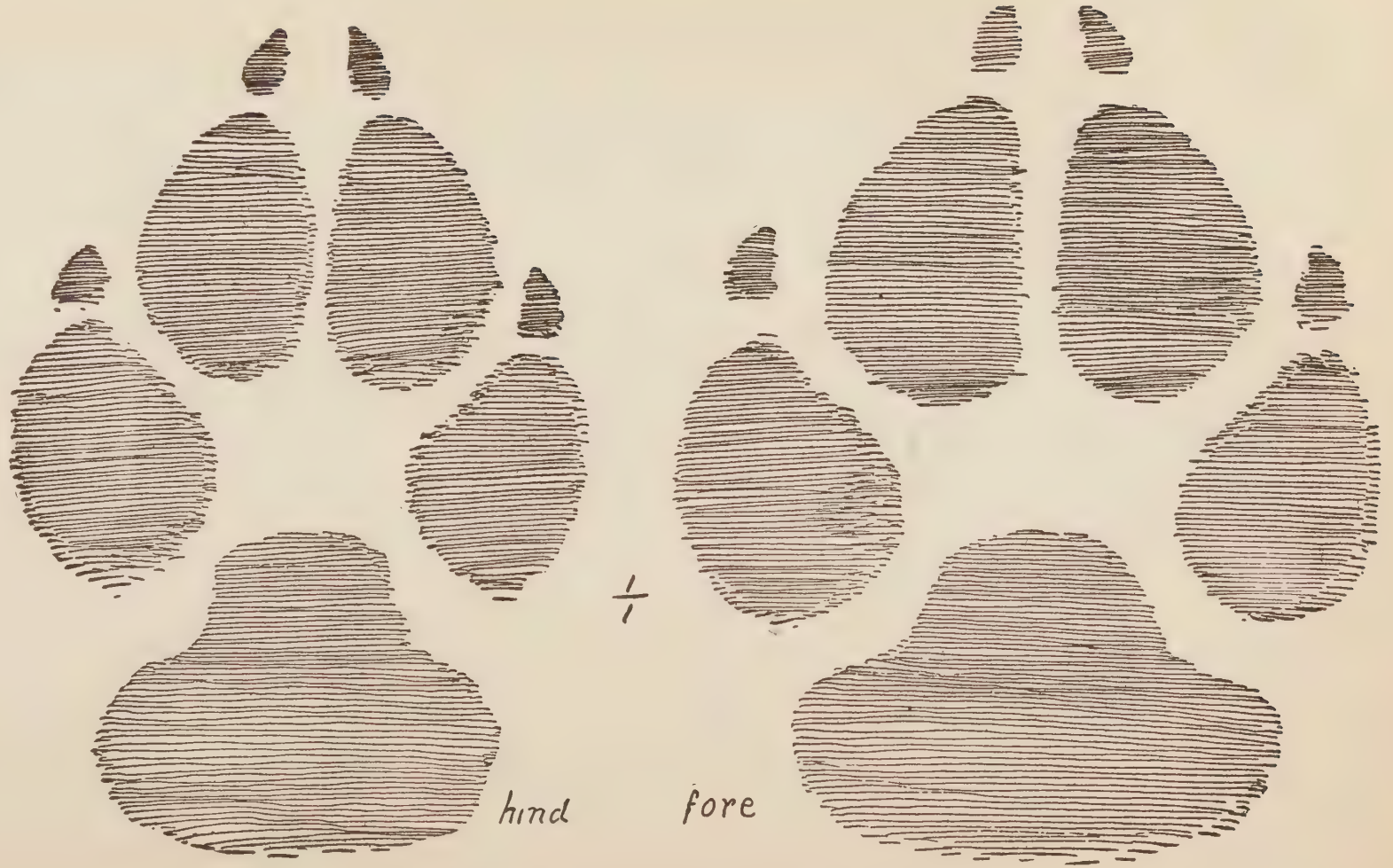

PLATE LIII—TRACKS OF LARGE GRAY-WOLF (LIFE SIZE)

The Wolf Howl

The usual cry of the Wolf is a long smooth howl. It is quite musical, though decidedly eerie when heard in the woods at night. I cannot distinguish it from the howl of a large Dog. Its beginning is also much like the hoot of a horned owl. This is usually the "muster" or "rallying cry"—the intimation of the Wolf to his friends that he has found game too strong for him to manage alone. It is the call commonly heard at night about the settlers' cabins and it never fails to affect me personally with a peculiar prickling in the scalp that I doubt not is a racial inheritance from the Stone Age.

A second sound is a higher pitched howl, vibrating on two notes. This may be styled the "hunting song"; it corresponds exactly with the full cry of a pack of Hounds on the hot scent.

A third is a combination of a short bark and a howl. It seems to mean the "closing in" for a finish. There are several others that I have often heard, but cannot comprehend. Some of my hunting friends claim that they can distinguish the calls of the she-Wolf to her mate and her young; the call of the young to their mothers, etc. I doubt not these signals are used, just as surely as Dogs use corresponding sounds among themselves, but I have not been able to distinguish them. The whining used by the young while still in the nest has already been spoken of, as well as the mother's similar response.

The veteran scout, "Yellowstone Kelly" (Capt. Luther S. Kelly), writes concerning the Wolf howl:

"It is in stormy weather that the Wolf appears to be in his element; the unearthly chorus, ringing all the changes of the gamut, startles the hunter in camp or the traveller by night. A Wolf delights in getting on some point of rock in a storm and howling in unison with the blast that sweeps through the gulches or canyons of the foothills. The wild Dogs that infest Indian camps howl in chorus like the Wolves, and it requires an expert to distinguish between the two."[57]

When I asked the old Plainsman, L. A. Huffman, of Miles City, Mont., to what extent Wolves use the odour-posts for far signalling, he replied:

"I have never heard of or seen anything to lead me to the conclusion that Wolves signal to one another across country other than vocally. The howl of a Gray-wolf can be heard a long distance.

"I once knew an old she-Wolf to carry a tallow ball—containing a big dose of strychnine—4 to 6 miles, laying it down in the snow every now and

[57] Forest & Stream, Feb. 20, 1897, p. 145.

again, while she bayed loud and long. She was joined by 2 full-grown males at different points. The trio travelled a mile together and then each ate enough of the bait (the ball was only an inch and a half in diameter) to kill, as was evidenced by the 3 bodies found the next morning within 50 feet of each other. They must have known it was loaded, but it would seem the temptation to eat was so strong they finally concluded to take the chances. They played for small stakes and lost."[58]

Mark Robinson in *Forest & Stream*, July 6, 1912, p. 10, says: "In this land of lakes and streams, if a Wolf howled, all the Deer would be ready to take refuge in the water; consequently the Wolf in these parts is the most skilful still-hunter. When their quarry is being pulled down and killed, they howl and growl much after the manner of many Dogs. Should a Deer escape into the water after a hard chase, the young Wolves will howl with disappointment for a few moments over their great loss, then all is silent.

"Wolves do a great deal of howling during the mating season in early spring months. During this period the males fight fiercely with each other. We have found where they have fought and moved on with their band, leaving a trail of blood for a mile or more. We have followed these trails, fully expecting to find them disabled, but they always appear to travel on as though nothing had occurred."

William Dicer of Albion, Mich., writes: "From what I have observed, I believe it true that Wolves can signal, one to another. Last fall my partner and I were in Minnesota. An hour or so before sundown one day, we heard a Wolf howl. The sound continued for a while and finally came toward us. My partner answered with a good imitation howl; but the Wolf retreated in the direction from which it had come. It was getting late, and we returned to camp. There we could still hear the Wolf calling. For some time, it obtained no reply; but at last we heard, from the opposite side of our camp, the answering howls of a half dozen or more Wolves. The sounds passed us, going in the direction from whence we heard the first call. From the difference in the tone of the howls, we concluded that the first came from an old she-Wolf, and the others from a party of young whom she had been calling.

"At another time I was setting traps on the ice in a pond. Five Wolves came out of the woods to the pond. When they saw me, they scattered in different directions. I fired 3 shots after them, but they were far away and running rapidly, and I failed to kill any. There was one large Wolf and 4 smaller ones; probably an old she-Wolf and her pups. Soon after the

[58] Recreation, Oct., 1897, p. 295.

large one reached the woods, she howled, evidently calling the others to her. In this case, I did not hear the young Wolves answer."[59]

The old-timer, Lew Wilmot, has given a lot of interesting details, showing how he decoyed Wolves within revolver shot by a clever imitation of the call-howl. His field of activity was the forests of Washington on the Clearwater. The time was about May 1st, and in each case it was a very big Wolf, apparently a male, that followed the siren-call to destruction. The chapter, though replete with woodsy detail, is too long for reproduction here.[60]

How They Spread the News

Besides these sounds as a means of intercommunication, Wolves use example, already set forth, and scents.

The scent method of communicating ideas I made the subject of an article in *Forest & Stream*, Jan. 23, 1897 (pp. 64–65). I reproduce the substance of it here.

Smell-power. It is well known that not only each species of animal, but that each individual has its own peculiar smell, conclusive evidence of which is found in the fact that a good Dog has no difficulty in following his master through a crowd, or keeping to the track of the animal he is hunting, though it be crossed by the tracks of many others.

It is further known that, even though it always retain its individuality, this personal odour varies with the condition of the animal. Thus a Horse smells strong after exercise; Canada grouse and Snowshoe Hares smell of spruce or cedar when they feed on these; a Mink smells different when angry; Dogs in ill-health become malodorous; Deer in rut become offensively strong-smelling; a female animal in rut is recognized afar by the scent.

Odour-glands. In many species additional effect is given to the body-scent by the development of special glands which secrete a strong odour. These glands are usually situated in a part which is habitually brought in contact with the ground or the vegetation. Thus, in a Musk-deer they are on the side of the belly; in the Peccary, on the back; in our common Deer, on the tarsus, between the toes, and in the lachrymal fossa. In some animals, however, the contact with the ground is secured in a different way. The glands are situated within the anal and preputial orifices, so that the natural excretions *in transitu* bear with them the taint which reveals so much to the next passer-by of the same species.

How much of these informational odours is supplied by the protometra,

[59] Recreation, May, 1898, p 381.

[60] Forest & Stream, Mar. 6, 1897, p. 185.

is not yet known. The protometra or protometric gland is, according to Chauveau,[61] a small pouch present in all domestic animals, and sometimes double, which secretes a fluid that is thrown into the urethra through a very small orifice near the *Verumontanum*.

George Fleming, the English editor, adds to this that the gland is not a gland in the ordinary sense of the term, but is certainly the rudiment of the duct that develops into the uterus of the female. It is also called the *prostatic utricle* or *sinus pocularis*.

Wolf wireless. In order that the second animal may find the depot of intelligence quickly, it is necessary that his discovery of the place be not left to chance; and, incredible as it may seem at first sight, there is abundant proof that the whole of a region inhabited by Wolves is laid out in signal stations or intelligence depots. Usually there is one at each mile or less, varying much with the nature of the ground. The marks of these depots, or odour-posts, are various: a stone, a tree, a bush, a Buffalo skull, a post, a mound, or any similar object serves, provided only that it is conspicuous on account of its colour or position; usually it is more or less isolated, or else prominent by being at the crossing of two trails.

Now, a man returning to town goes at once to his hotel or club, glances over the last three or four names on the register, adds his own, then makes a more thorough inspection. And the behaviour of an animal arrived at an odour-post is precisely the same. It approaches, hastily sniffs the post, adds its own odour, then makes a more thorough investigation. The attention that Dogs pay to lamp-posts in town is precisely the same habit, a trifle overdeveloped through idleness, etc., but it will serve to illustrate. I have many times seen a Dog approach the post, sniff, then growl, register, growl again, and, with bristling mane and glowing eyes, scratch fiercely with his hind-feet, and walk off very stiffly, glancing back from time to time.

Again, it is common to see a Dog, after the preliminaries, become keenly interested, trot about the vicinity, and come back again and again to make his own record more evident. At other times one sees the animal, suddenly aroused by the news, take up a recent trail or fly to the next signal post, and so continue in pursuit of whatever it was that was sensed.

Registering. Wolves do precisely the same, but I believe they carry it to a higher pitch, and there can be no doubt that a newly arrived Wolf is quickly aware of the visit that has recently been paid to the signal post—by a personal friend or foe, by a female in search of a mate, a young or old, sick or well, hungry, hunted, or gorged beast. From the trail he learns further

[61] Anatomy of Domestic Animals, English version, p. 969.

the direction whence it came and whither it went. Thus the main items of news essential to his life are obtained by the system of signal posts.

Every man who has hunted or trapped Wolves knows how soon they divine a new campaign against them. The word is passed around (on the odour-posts partly), and the Wolves move to a less troubled neighbourhood, showing a wonderfully effective system of communication among these freebooters.

G. B. Grinnell remarks on this head: "It is said that ranges where Wolves are persistently chased, or where a few have been successfully trapped, will, after a short time, be absolutely deserted by the remaining Wolves, who migrate to some other section of the country where they are less disturbed.

"I heard this autumn of a place in Wyoming called the Settlements which had been troubled for a year or two by Wolves. At length one of the men devoted some time to trapping them, and succeeded in catching 3, and shortly afterward the Wolves disappeared from the neighbourhood, and immediately another region about 30 miles west, where there had before been none, began to be troubled by them. Here they did much harm, killing in a couple of months, besides many range Cattle, 21 cows and calves immediately about the settlers' houses, animals that were kept for milk."[62]

Expression of Scorn. The Wolf, as well as the Dog, has further a habit of urinating or defecating on certain things that appeal to his nose without arousing his appetite. He usually follows this action by vigorously scratching the dust with his hind-feet over and around the object defiled. This treatment is commonly accorded to poisoned baits as well as to traps. I am inclined to think that Wolves have been taken in some of my hidden traps while thus serving them with a Wolf's contempt, and heedlessly going too near while doing so. On other occasions, stones raked into the trap by this scratching have sprung them, and thus they have been fully revealed.

I am satisfied that scorn—that is, hate with superiority—is among the feelings thus expressed, for I once saw the victor in a fight between 2 female Coyotes urinate gleefully again and again on her fallen foe as she crouched in a corner of the cage.

Expression of Anger. A scent-gland that has long been overlooked is on the base of the tail above; its exact place is marked by a dark spot on most of the Dogs. In the Gray-wolf this spot is black, the hairs composing the spot are bristly, and there is no under-fur at the place.

In the Gray-fox chapter I have given a diagram of the tail-glands of various *Canidæ*.

[62] Forest & Stream, Dec. 26, 1896, p. 511.

When a Dog or Wolf, ready to do battle, approaches a stranger, the tail is raised at base and drooped beyond, so that this gland is at the highest point, and the hairs on it are raised. This doubtless allows the escape of more of this scent. It acts as the individual's identification disc.

In play, in battle, or in abject fear, there is no suggestion of this pose of tail. (See Plate LVII.)

Sanitation

In sanitation, Wolves have the habits of ordinary Dogs. They do not bury their dung, but they keep their dens clear of it, and I think that all Wolves, except the helpless cubs, leave the den to urinate.

Diseases

The diseases that have been observed to torment the Gray-wolf are mange, scab, and rabies. I have several times heard of mange removing all of a Wolf's hair except a ridge along the spine, and in consequence have arisen many rumours of strange beasts in the land.

Warburton Pike says: "There was some sort of disease resembling mange among them [Gray-wolves] in the winter of 1889–90, which had the effect of taking off all their hair, and judging from the number of dead that were lying about, must have considerably thinned their numbers."[63]

Henry in his "Journal" (p. 194), makes frequent mention of scab. Thus:

"March 5. A large Wolf came into my tent three times, and always escaped a shot. Next day while hunting, I found him dead about a mile from the Fort; he was very lean and covered with scabs."

Rabies or hydrophobia seems to break out among them at times. Although Wolves do not ordinarily attack man in America, there are one or two cases on record, from the western United States, but there is also evidence that in each case the Wolf was rabid.

Even as early as 1800, it appears to have been considered evidence of madness for a Wolf to attack a man, as Henry thus makes record at Park River:

"Nov. 2. Last night the Wolves were very troublesome; they kept up a terrible howling about the Fort, and even attempted to enter Maymiutch's tent. A large white one came boldly into the door and was advancing toward a young child when he was shot dead. Some of them are very audacious. I have known them to follow people for several days, attempt to seize a person or Dog, and to be kept off only by fire-arms. It does not appear

[63] Barren Ground, N. Canada, 1892, p. 53.

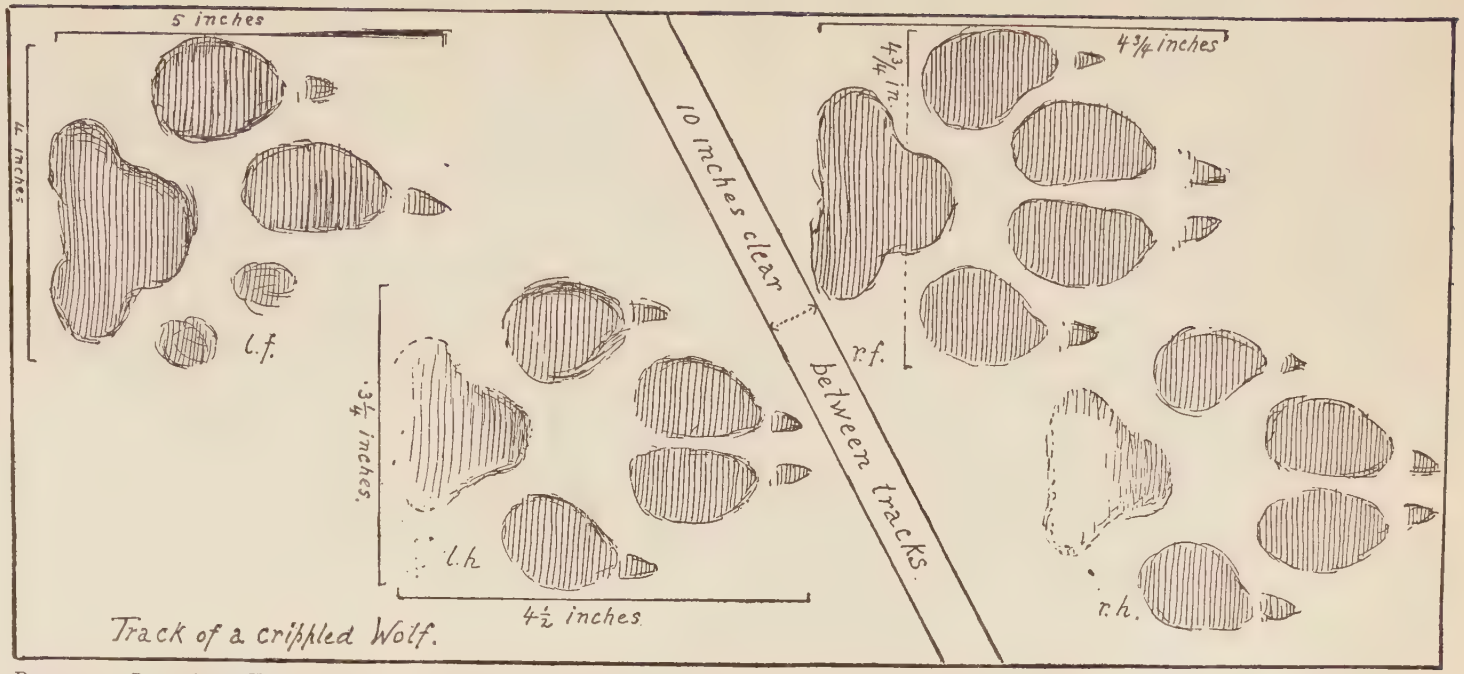

PLATE LIV—Remarkable Wolf track that I found on Athabaska River, near Calling River, Oct. 30, 1907. It had lost the two inner toes of the left hind-foot, and the heel pads of both hind-feet were so faint as to be lost at times, though the toe pads of the same foot were deeply impressed in the mud. I took these signs to mean that the Wolf, an unusually large one, had been caught in a trap, but escaped by leaving behind the missing toes, and was now starved to a skeleton.

that hunger makes them so ferocious, as they have been known to pass carcasses of animals, which they might have eaten to their fill, but they would not touch flesh; their object seeming to be that of biting. The Canadians swear that these are mad Wolves and are much afraid of them."[64]

And again: "April 18, 1810 [on North Saskatchewan]. Another mare was bitten in the nose by a mad Wolf and died the day after, foaming at the mouth and running around distracted."[65]

Charles Aubrey, writing of rabid Wolves in the Old Plains days, says that there were outbreaks of rabies at times among the Buffalo-wolves, and that the Indians were in terror of such.

"Wolves afflicted with rabies," he says, "were most often seen in the months of March and April, although I have seen them quite late in the season of dog-days with all the signs of the dread disease. They went alone, roaming aimlessly about, lacking the motions of a hunting Wolf, trotting along, at intervals making a circling movement, snapping at the tail or hind parts as they made the circle, keeping up a trot and repeating until lost sight of. When killed they showed marks of self-inflicted wounds.

"The Indian Dogs by their actions showed they knew mad Wolves when they came into the camp, by keeping from close contact with them, barking and yelping at them, closing in on them, and again retreating—herding them out of camp.

"An Indian once told me of a well-to-do chief of his people, who owned a band of Horses, all of a mouse colour, with a black stripe down the back. For years he had been breeding them, and he felt much pride in and affection for them. His camp was attacked by a band of mad Wolves, and his band of Horses all died from being bitten. I have not seen a case of rabies on the range of late years, for with the disappearance of the Buffalo went also the great bands of Wolves."[66]

Doping, or the Carrion-craze

The strange habit of doping, so general among the members of the Dog family, is very well marked in the Gray-wolf, as is attested by all who know the creature at home.

Dall De Weese, the well-known sportsman of Canyon City, Colo., contributes a number of observations. He had shot an Elk on White River, Colo., but failed to find it until the meat spoiled. It was then furnishing a feast for a couple of Grizzly-bears.

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[64] Journ., p. 133.

[65] As above, p. 594.

[66] Forest & Stream, Aug. 1, 1908, p. 174.

Coming cautiously back on the third day, hoping for a shot at the Bears, he found another animal. In his own words:

"On creeping to the edge and looking over, I saw a large Timber-wolf at the carcass. . . . I watched him carefully through my glasses, and crawled a little nearer, under cover of a clump of willows. I found he was not eating, but 'lolling' about the carcass. I saw him roll on it repeatedly. He would sit up, lick himself, jump over the carcass, and at it again. . . .

"I levelled my gun for a 250-yards' shot and cut loose. I saw a grayish streak with a funnel end to it, reaching from the carcass to the timber, but haven't seen the Wolf since. I approached the carcass and found the Wolf had not eaten a morsel of it, but had contented himself by rolling in it.

"I have frequently seen Dogs roll in and about the carrion of a Cow or Horse without eating of it. Why they do it I cannot say, unless they have the instinctive desire of all carnivorous animals to linger about flesh, either fresh or carrion; and if it has passed the eatable stage, they roll in it to carry that 'in-stinktiveness' with them."[67]

Dogs, Wolves, and Foxes seem delighted with the opportunity of making themselves reek with stench of the foulest flesh or fish they can find. Although the Dogs are without the personal nicety of Cats, they do have some habits of cleanliness, and spend a certain amount of time in dressing the fur. Who has not seen a Dog bite the burrs out of his coat, or the ice balls from his legs? A Dog or a Wolf which is wounded or bleeding will take the trouble to remove the stains from his fur, and the mystery of his rolling in carrion is unexplained. It cannot be a pleasant smell to him, one would think, because oftentimes it is stuff he will not eat.

E. A. Preble writes me that "A Dog will roll with delight on the spot where a Skunk has been killed, and wh ch retains its odour."

The suggestion that it is based on the sexual instinct does not seem to hold, as female Dogs, as well as males, will do it at any time. I know of no satisfactory explanation.

Speed

The speed of the Wolf is often exaggerated. My impression is that 21 or 22 miles an hour would represent the *highest rate* of an average individual *for one mile*. This is much less than the speed of the Coyote, Jackrabbit, Deer, Antelope, greyhound, or even foxhound; but the Wolf can keep it up longer than most animals. In the "Coyote Life" (p. 388), I have attempted a scale to show the comparative speeds of different animals that

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[67] Recreation, Aug., 1897, p. 151.

run on the Plains, giving the rate per hour at the best speed of a representative individual for one mile.

Swimming

The Wolf of Ontario is known to be a good swimmer. W. Lewis Fraser once described to me the antics of a family of Gray-wolves that he saw playing in the water like a lot of water spaniels. This was in Muskoka during the month of September, and they therefore were probably a family and the old ones were teaching the cubs to swim.

Track and Dung

The track of a Wolf cannot be distinguished with certainty from that of a large Dog. (See Plate LIII.)

While size is the chief distinction between Wolf and Coyote tracks, there is also this general difference: the central toes in the Wolf often make a larger track than the outer toes; in the Coyote the outer toes commonly make a larger track than the inner toes. This remark applies only to the track; there seems nothing in the toes themselves to correspond with these proportions.

On Oct. 30, 1907, about 20 miles below Athabaska Landing, on the River, I saw a remarkable Wolf track. It had lost the two inner toes of left front-foot, and the hind-feet pads were so faint as to be lost at times, though the toes were deeply impressed in the mud. I took this to mean he was starved to a skeleton, probably had been in a trap. (See Plate LIV.)

The dung of the Wolf is like that of a Dog. The hair of game animals in it will sometime prove it to be the product of the Wolf.

PLATE LV.—BLANCA IN THE TRAP
From photograph by E. T. Seton

PLATE LVI.—LOBO IN THE TRAP
Currumpaw, New Mexico, January 31, 1893
From a photograph by E. T. Seton

Food Habits

The diet of this species includes every kind of animal food that he can secure, from Mouse to Moose. Throughout the summer, Mice and such "small Deer" are doubtless the staples. The coming of winter makes a radical change. First, it puts the small game beyond reach; second, it robs the Moose and Deer of the safe refuge afforded by the lakes and rivers and thus brings these great ruminants into the dietary of the Wolves.

Moose-killer

Writing of the Northern species, R. MacFarlane says:

"These Wolves yearly succeed in killing as prey quite a large number of Reindeer and not a few Moose. On one occasion, while travelling upon the ice between Forts Liard and Nelson, in the Mackenzie River District, we came across a big patch of hardpacked snow on the Liard River, where a large buck Moose had evidently been surrounded and no doubt overpowered, after a most gallant fight for life, by perhaps a score of ferocious and cowardly Wolves. A few well-picked bones and the skull were the only relics left. At a short distance, however, we perceived a full-grown Gray-wolf, which was at once shot. It had one of its hindlegs shattered by a kick from the Moose, which so disabled it that it could scarcely crawl. Had its companions not been fully gorged, they would doubtless have fallen upon and eaten it, too."[68]

According to Thomas Anderson, on the Mackenzie, Wolves often kill Moose. In Feb., 1905, he saw on the ice, 34 miles below Providence, the marks where a band of Wolves had pulled down and devoured a Moose.

Edward Nagel, fur-trader at Fort Smith, gives the two following items:

In January, 1907, at Fort Providence, a trapper named Baptiste Bouvier went out to look at his Rabbit snares, when he came on the tracks of a band of half-a-dozen Wolves, evidently attacking a cow Moose. He followed half a mile and found the Moose just killed; they had not begun to eat her. The Wolves ran off and he brought the meat home on his Dog sleigh.

Again, in July, 1906, when Bouvier was resting for lunch at a point 20 miles below Providence, he heard a crashing in the woods and a Moose broke out of the woods and into the water, pursued by one Wolf. He

[68] Mamm. of N. W. Terr., Proc. U. S. Nat. Mus., XXVIII, 1905, pp. 692–93.

shot the Moose but the Wolf escaped. The Wolves commonly disable Moose by hamstringing them.

In the winter (March) of 1907, on Steep-Bank River, E. Robillard says he saw a Wolf running away. Then in the woods, near the bank, he found the body of a yearling cow Moose fresh killed; its head was gone. He followed the back-track a long way and learned that the Wolf was alone, had pursued the Moose for miles, and finally disabled it by partly hamstringing it; but the Moose was not overcome until at last driven over a high place where the fall crippled it. The trail had more and more blood up to the place of the kill. Here it seems the Moose's throat was torn open, and the Wolf had eaten until the head was off. The head was gone, he could not tell where, and did not understand why or how; the "tripes" (entrails) of the Moose were dragged for half a mile across the river.

On the beach of the Athabaska River above Fort McMurray, October 19th, I found many Wolf tracks, one of immense size, $5\frac{1}{2}$ x 5 wide; another smaller one, a female, by the "water mark." There were also many Moose tracks, and the Wolves had killed a Moose, as their dung was full of Moose hair. Not less than 5 Wolves were in this band.

A curious case of Moose-eating, if not Moose-killing, is described by the J. F. Bell Expedition into the Superior National Forest Reserve, Minnesota.

"On Sept. 3, same year [1912], I unexpectedly surprised one of these Wolves, at about 3:30 in the afternoon of a windy day, while it was feeding upon the carcass of an adult cow Moose which lay in a rather narrow but deep part of Isabella River just above a rapids. I was within 50 feet of the animal before it became aware of my approach. Whether the Moose had been accidentally drowned or had been driven into the river by a family of Wolves, and had been harassed and prevented from getting out, I cannot say. Escape up stream was impossible, as the river was crossed by a wall of drift timber. The west bank was lined with huge boulders, and a few yards down stream was a steep, turbulent rapids, making escape also very difficult in those directions, but easy exit was afforded on the east bank.

"Numerous Wolf tracks along the soft edges of both banks in the vicinity, some of which were smaller than others, suggested that perhaps a family with the season's young had been engaged. It had all taken place during a four-days' absence from our main camp within a half mile of which it occurred.

"The lumbar region of the back had been eaten into several inches when the carcass was found, and as the water was much beyond their depth, and the carcass lying on its side, afloat, it was necessary for the animals to

'tread water' when feeding. The first glimpse of the Wolf was obtained while it was struggling and splashing rather energetically in the water beside the back, but unfortunately it detected my presence before it was possible to get in position for a clear view of the interesting process."[69]

A Killer of Deer, etc.

The destruction of game by Wolves is thus discussed in the Wolf Report, 1907, by Bailey:

"Judging from the evidence obtained, Wolves kill far less game in the western United States than either Coyotes or Mountain Lions.

"At Big Piney, Wyo., I examined Wolf dung in probably 50 places around dens and along Wolf trails. In about nine-tenths of the cases, it was composed mainly or entirely of Cattle or Horse hair; in all other cases but one, of Rabbit fur and bones, and in this one case mainly of Antelope hair. A herd of 20 or 30 Antelope wintered about 5 or 6 miles from this den, and the old Wolves frequently visited the herd, but I could find no other evidence that they destroyed Antelope, though I followed Wolf tracks for many miles among the Antelope tracks on the snow. Jackrabbits were killed and eaten along the trails, or brought to the den and eaten near it almost every night, and a half-eaten Cottontail was found in the den with the little pups.

. . . . . .

"About a den near Cora, the numerous deposits of Wolf dung on the crest of the ridge not far away were found to be composed of Horse and Cattle hair, though fresh Elk tracks were abundant over the sidehills on all sides of the den, while Cattle and Horses were then to be found only in the valley, 8 miles distant. Several Jackrabbits had been brought in and eaten, and the old Wolf on her way to the den had laid down her load, evidently a Jackrabbit, gone aside some 20 feet and caught a ruffed grouse, eaten it on the spot, and then resumed her load and her journey to the waiting pups. One small carpal bone in this den may have been from a Deer or small Elk, but no other trace of game was found.

"Talking with hunters and trappers who spend much time in the mountains when the snow is on the ground, brought little positive information on the destruction of Elk or Deer by Wolves. Mr. George Glover, a forest ranger long familiar with the Wind River Mountains in both winter and summer, said that he had found a large Blacktail buck which the Wolves had eaten, but that he suspected it had been previously shot by hunters. In many winters of trapping where Elk were abundant, Mr. Glover has never

[69] Notes on Mamm. Minnesota, Forest & Stream, Oct. 17, 1914, pp. 499–500.

found any evidence that Elk had been killed by Wolves. Coyotes constantly follow the Elk herds, especially in spring when the calves are being born, and probably destroy many of the young, but Wolves apparently do not share this habit. It seems probable, however, that in summer the young of both Elk and Deer suffer to some extent, while the Wolves are among them in the mountains.

"Many Deer are killed by Wolves in the timbered regions of northern Michigan, Wisconsin, and Minnesota, and in parts of Canada, especially during the winter, when snow is deep and domestic animals are housed. On Grand Island, in Lake Superior, a Gray-wolf appeared on the game preserve of the Cleveland-Cliffs Iron Company in Jan., 1906, when the snow was 2 feet deep. Within the next 30 days, it killed 13 Deer and 1 Caribou, the carcasses of which were found by the party organized to hunt the Wolf."[70]

In Algonquin Park, Ontario, when the great increase of Deer assures the Wolves of a winter supply of food, the latter have been very troublesome. Mark Robinson, the Ranger, says that in the winter of 1921–22, 50 Deer were killed near Camp Ahmek within 1,000 acres—a burnt tract—by 5 or maybe 6 Wolves. One of these, a very large one, killed a Beaver out on the ice in March. The Wolf disembowelled it, but did not eat it, showing that he was well fed.

The swiftest creature on the Plains was the Antelope, but its speed did not always save it from the craft of the Wolf.

Bailey says: "While Wolves are usually found around Antelope herds, they are probably able to kill only the sick, crippled, and young. The following note from Wyoming appeared in the Pinedale *Roundup* of July 4, 1906:

"'While riding on the outside circle with the late round-up, Nelse Jorgensen chanced to see a Wolf making away with a fawn Antelope. He gave chase to the animal, but it succeeded in getting away, never letting loose on its catch.'"[71]

A glimpse of the match of wits against speed is afforded by Enos A. Mills, who writes: "Three Wolves chased a young Antelope through my mountain camp. Though they nearly ran over me, I doubt whether either the Antelope or the Wolves saw me. On they went across the plateau. I hoped that the Antelope might escape; but just before he reached the top of a ridge, I saw a Wolf peering over. The Antelope and the Wolves disappeared on the other side, where I suppose the drifting clouds and steadfast pines again witnessed a common tragedy of the wild."[72]

[70] Wolves, pp. 18–19.

[71] As above, p. 18.

[72] Watched, pp. 142–3.

PLATE LVII.—GRAY-WOLF APPROACHING TO ATTACK
Life study by E. T. Seton

On another occasion also, he witnessed part of a drama that he thus details: "On the Great Plains in western Nebraska, I saw 2 speeding objects stirring dust on the horizon. It was an Antelope cut off from the flock and pursued by a Wolf. They plunged for a moment or two in a dip of the plains, then reappeared. With glasses on them I saw the pursuing Wolf drop out and another Wolf leap from concealment to relieve him. Following them through glasses as they raced on skyline against a cloud, dropped below eyeline, dashed behind a butte, swiftly the great circle followed brought them within half a mile. In plain view another Wolf leaped into the race. The Antelope was nearly exhausted. The Wolves were leaping at her throat as she disappeared over a ridge. Little puffs of dust showed the advance of pursuer and pursued. These grew dim and I watched for the runners to come up on the skyline. But they never appeared."[73]

Badgers, Kit-foxes, Cottontails, Ground-squirrels, etc., commonly find a safe refuge in the bosom of Mother Earth when the grim Gray-wolf gets over-near, but the poor witless Jackrabbit must trust wholly to his heels—his heels against the Wolf's wits, a poor match, one in which the wits must often win.

G. B. Grinnell writes: "The abundance or scarcity of the Prairie-hare in any district depends almost altogether on the number of Wolves to be found in the same tract of country. Where all the Coyotes or Gray-wolves have been killed or driven off, the Hares exist in great numbers; but where the former are abundant, the latter are seldom seen. We saw none near the Missouri River, where the Buffaloes, and consequently the Wolves, were numerous; but at Camp Baker, where there were scarcely any Wolves, the Hares were very common."[74]

Thus we have seen that every kind of flesh, fish, or carrion that he can get is acceptable food to the Wolf. I find no records of it feeding on fruit, as do Foxes and Coyotes, but Audubon, referring to the Wolves on the Missouri River, says:

"Wolves are said to feed at times, when very hard pressed by hunger, on certain roots which they dig out of the earth with their forepaws, scratching like a common Dog in the ground."[75] And I have several times heard of Wolves hard pressed in winter, filling their bellies with Horse dung gathered on the highway.

Now we come to the great food supply of the Western Wolves to-day, the Cattle of the ranges. Have we not robbed the Gray-wolf of his lawful

[73] Watched, pp. 180–81.

[74] Ludlow's Rep. Reconnaissance Yellowstone Nat. Park, 1876, p. 69.

[75] Q. N. A., II, p. 159.

ancient food, the Buffalo? Have we not declared war on him and his? Do we not harry and hate him? What more reasonable, then, than this—that he should prey upon our gear, nourish himself and his family with the proper spoils of war, the Cattle that we call ours, but which are the property of those who first can get and keep them.

Destroyer of Cattle

When a man goes a-hunting to get food, we call him a pot-hunter and despise him. When a man goes a-hunting for the pleasure of the chase, and piles up a long list of dead, announcing an incredible bag, we laud him as a sportsman.

When a Wolf goes hunting for his food, we hate him for a destroyer, even though he be starving. When he has sufficient food and kills for the love of sport, we have no language strong enough to condemn the destructive monster.

Thus Manly Hardy says: "While usually our carnivorous animals kill to supply their immediate wants, still there are some species which often kill for mere sport, and there are few kinds of which some individuals do not at some time kill wantonly.

"When I was a boy and there were Wolves in Maine, I have known 4 or 5 Wolves to kill over 40 Sheep in a single night in a town near here."[76]

Can we not be honest enough to say that the Wolf is a sportsman, swayed not by vulgar appetite or desire for material possession, but by the love of the game, the joy of the chase? He is a real sport.

Let this be my introduction to a chapter on wholesale slaughter of Cattle by Wolves.

Concerning a band of unusually sportsmanlike Wolves in New Mexico, Bailey writes:

"Judging from my own observations and from what I could learn from the ranchmen, a moderate estimate of the stock killed by each of these 4 Wolves would be a calf or a yearling or a cow every three days, or approximately 100 head of Cattle a year to a Wolf. Counting all as calves, at the very low rate of $10 a head, each Wolf would at this rate cost the ranchmen $1,000 a year. This estimate of $4,000 for the 4 Wolves leaves out of consideration the 5 to 10 hungry offspring of each pair, which would begin to kill stock for themselves in the fall and would continue to do so as long as they lived.

"From the same section of the Gila Reserve, on Sapello Creek, Mr.

[76] Forest & Stream, Mar. 13, 1909, p. 412.

Victor Culberson, president and manager of the G O S Cattle Company, writes under date of June 3, 1906:

"'We estimate the losses on our ranch by Wolves to be at least 10 per cent. Three years ago, while gathering steers to be turned off and holding them in a small pasture, we found one morning 8 yearlings that had been killed during the previous night, and in gathering and disposing of that bunch of about 500 head of Cattle, we had 31 head killed. We have always estimated our losses by Wolves to be the greatest of those from any wild animals. When the Wolves first appeared in this part of the country we paid $50 apiece for 10 of them and considered them cheap at that price. It requires a constant fight to keep them down so as to make the Cattle business at all profitable.'"[77]

Still more pointed evidence of sporty instinct is seen in Enos A. Mills's account: "In North Park, Colo., I saw 2 Wolves pull down 3 two-year-olds in a short time. I watched them through a field glass. One Wolf attacked in front, while the other kept leaping and snapping at the flanks and legs until the animal fell. These three animals were killed in less than half an hour. As they were not eaten, the killing was apparently for the amusement of the Wolves."[78]

The following general summary of Wolf destruction is given by the Biological Survey in 1918:

"The President of the New Mexico College of Agriculture, as a result of a survey of conditions in that State, estimates an annual loss there of 3 per cent. of the Cattle, or 34,000 head, and 165,000 Sheep. A single Wolf killed by one of the bureau hunters in southern New Mexico was reported by stock owners of that vicinity to have killed during the preceding 6 months 150 head of Cattle valued at not less than $5,000. In July, 1917, 2 male Wolves were killed in Wyoming, which in May had destroyed 150 Sheep and 7 colts. Another pair of Wolves killed near Opal, Wyo., were reported to have killed about $4,000 worth of stock a year. Another Wyoming Wolf, trapped in June, 1918, had killed 30 Cattle during the spring. Exceptionally skilful hunters and trappers are detailed to capture these especially destructive animals as rapidly as they are reported, and the success in capturing them has resulted in a great addition to the meat output of the ranges."[79]

Does not all this read like the hunting trips of a German nobleman—a true sportsman?

Finally: "The average destruction by these animals is estimated to

[77] Wolves, pp. 12–13.

[78] Watched, pp. 145–46.

[79] Rep. Biol. Surv., Aug. 29, 1918, p. 3.

be for each Wolf and Mountain Lion about $1,000 worth of live stock annually; each Coyote and Bobcat, $50 worth; and each stock-killing Bear $500 worth."[80]

There is one wild Western creature that has little to fear from the Wolves, that is the Prairie Pony, the Broncho. Twenty years ago, I knew a band of Wild Horses in the Uinta desert country of Utah that lived and prospered without fear of Wolves, though they had a wholesome respect for Mountain Lions.

The following is probably the second chapter of a Wolf's attempt to secure Horse meat. I learned the history from the Hudson's Bay Company traders on the Great Slave River in 1907.

About 1897 a large Wolf appeared near Fort Smith and dogged the Rabbit trappers. Wherever they went to operate, this Wolf found the beat and stole their catch. At length he was poisoned by Sousi Beaulieu, and it was found that his under jaw was broken and stuck out at right angles to the upper; it was quite useless. It is supposed that he was kicked by a Horse. The fall before, a little white-faced sorrel mare belonging to Gerome Beaulieu had come running in with two gashes on her hip as though a Wolf had tried to hamstring her, but she was very active and had known how to take care of herself; probably *she* broke the Wolf's jaw.

The Wolf was a very large one but very poor.

Enos A. Mills gives us a stirring account of a battle between Wolves and a Broncho, in which the tables were more completely turned. He says: "In Montana I once saw a pair of Wolves attack a Broncho. The Horse, which was exceptionally keen-witted and agile, fought the Wolves off successfully for several minutes, and finally smashed a hind-leg of one with a kick. He then became aggressive, and endeavoured to stamp the injured Wolf to death. Under the brave protection of the other Wolf, which fiercely fought the enemy, the disabled one tried to escape; but the Horse landed a kick on this fighter, crippled it, and finally killed both."[81]

Habits in General

The Gray-wolf is one of the shyest of wild animals. I have talked with men who have lived their whole lives in regions where Gray-wolves were far from rare, and yet they have never seen one. They hear them at night, they see their trails and their work in the morning, but never see the animals themselves until they have been trapped or poisoned. Their extreme shyness is partly a modern development, as also is the respect for man, which

[80] W. B. Bell of Biol. Surv.: Yearbook, Dept. Agri., 1920, p. 291.

[81] Watched, pp. 148–49.

now fully possesses every Gray-wolf in the Cattle country. There are many records that show the Wolf to have been a continual danger to mankind in the bow-and-arrow days. There can be no doubt that then man was considered a fair prey—a difficult and wide-awake one, no doubt, but still a creature to be eaten in times of scarcity. Consequently, each winter in America, as in Europe, a number of human beings were killed and devoured by hungry Wolves.

During the last 50 years, however, I cannot find a reliable instance of Wolves killing or even attacking human beings.

The following, related by George Fraser, of Winnipeg, aptly illustrates the disposition of Wolves to-day. In 1886, he was travelling near Whitewater Lake, in southern Manitoba. He came on a Swede who was drawing a long box wagon in which were three or four quarters of beef. Sometimes on the load, and sometimes running around, were 2 large Gray-wolves, feeding on the beef in spite of the Swede's efforts to keep them off with a pitchfork. The driver and the Wolves dodged around the wagon for some time before the man heard Fraser's shouts to stand aside; when he did, Fraser shot both Wolves. The Swede said these two had been a pest for some time, killing his Sheep and one colt. They had never offered violence to man.

I have seen many recent newspaper clippings that recorded harrowing tales of men, women, and children devoured by gruesome packs, but each and all have crumbled into newspaper stories when fully investigated; always, however, with the inevitable exception explained by the fact that the Wolf was rabid.

G. B. Grinnell has had a similar experience, and writes: "For many years I have been looking for an authentic case where a Western Wolf attacked a human being. I think I have found one now in the daughter of old Jim Baker, who still lives down in Colorado, on Snake River. The occurrence happened about 15 years ago, and the attack was made, not because the Wolf was hungry, but because he was cross. The young girl, then 18 years old, was going out at dusk to drive in some milk cows, when she saw sitting just above the trail on the hillside a Gray-wolf. She called at it, and when it did not move, picked up a stone and threw it. The animal came jumping down the hill, caught her by the shoulder, threw her down and tore her badly on the legs and arms. She screamed, and her brother, who happened to be near by, ran up with his gun and killed the Wolf. This was a young Wolf, barely fully grown, and his act it would be hard to explain. The woman still bears the scars of the encounter."[82]

[82] Forest & Stream, Dec. 26, 1896, p. 512.

The question then arises, are the old records wrong, relating, as they do, the frequent destruction of man by Wolves; so much so that in the ancient days of Europe, the Wolf was the most dreaded of wild animals? Or are the modern Wolves of different species?

The answer is, the modern Wolves are the same as the old ones, except in one particular, *viz.*, that they have been educated by gunpowder to let man alone. Man with the modern gun is a different creature from man with the bow and arrow. The Wolves have learned this, and are now no more a menace to human life than are the Prairie-wolves or Coyotes. Not only do they abstain from harming man, but they have learned that they are likely to be harmed by him, unless they keep out of sight in the daytime. This, I think, is why Wolves are so rarely seen, even where comparatively common.

In accounting for these changes, it is not necessary to attribute human intelligence to this animal. Evidently much hard luck and many unpleasant surprises have engendered in it a deep and general distrust of all strange things, as well as a well-founded fear of anything that bears the taint of a human being. This distrust, combined with its exquisite sense of smell, may explain much that looks like profound sagacity in this animal. Nevertheless, this will not explain all, as I have had very good reason to remark again and again, when I have endeavoured to trap or poison Wolves on the Cattle ranges.

And even ascribing much to mere shyness does not remove it from the sphere of intelligence, though doubtless ranking it lower in that department, making it a vague fear of the unknown, in place of a dread of danger well comprehended.

Strength

Although we must be cautious about receiving accounts of the Gray-wolf's ferocity, we are sure to be surprised by facts about its strength. I have known a young Gray-wolf, scarcely 6 months old, drag off a 100-pound bar of iron to which it was chained, taking it 200 or 300 yards without stopping and a quarter of a mile before discovered. This same cub could almost hold its own against an ordinary man pulling at its chain. I have several times seen a Gray-wolf in a trap go off with a drag that weighed considerably over 100 pounds; and on one occasion, I saw an 80-pound female that was trapped, drag a 52-pound beef-head over rough ground faster than I could follow on foot, and keep up the flight for one and a half miles.

I have known a Gray-wolf go off carrying the head of an Ox in his jaws, and take it so far that I gave up following his trail in the dust. I did

not weigh the Ox-head, but found that a small cow-head weighed over 50 pounds, so that it must have been at least 75 pounds.

The Wolf's great strength, indeed, is in his jaws. It is doubtful whether any Dog of truly domesticated race has such powerful jaws as the Wolf. It is generally believed by the hunters that for this reason no Dog has yet been found which, single-handed, could conquer a full-grown Gray-wolf.

The rope used for lassos on the Plains is half-inch manila, and yet has often been cut through by a single clip of the Wolf's jaws when he has been lassoed.

Theodore Roosevelt gives thus an instance of a Gray-wolf killing a Horse. "With a few savage snaps, the Wolf hamstrung and partially disembowelled it."[83] Many similar cases could be cited.

Writing on the prowess of the Wolf, Grinnell says: "I have said something about the power of the big Wolves, and it is well known that a couple of them can pull down a two-year-old heifer without trouble. The reason I know this is because I have seen them do it. A couple of Wolves had a bunch of stock rounded up in a valley, and were just walking about and holding them there, when suddenly one of the Wolves made a plunge into the Cattle. A foolish young two-year-old dashed out of the band and the other Wolf had her cut off the moment she separated from the bunch. Then both Wolves made a dash at her, caught her by the hind-legs, spread her apart and killed her, I think, in 10 seconds."[84]

The strength of its jaws is, doubtless, a cardinal factor in the Wolf's life-problems, not only putting it beyond danger from other carnivora, but also leaving all herbivora at its mercy.

Doubtless its hold on environment is largely due also to endurance. A Wolf can live on one full meal a week; that is, a dozen meals at equal intervals would carry it through the winter.

The Wolf that Archbishop Taché tells of roamed for a month in deep winter, at Isle à la Crosse, with a heavy trap and clog on his hind-foot. It is hard to see how he could have got a meal in all that time, and, though emaciated, he was very lively indeed when found.[85]

His Method of Hunting

The species is credited by most hunters with cunning enough to hunt by combined drive and ambush, exactly as described in the chapter on the Coyote. This I have not personally witnessed, but many observers have.

[83] The Wilderness Hunter, p. 394.

[84] Forest & Stream, Dec. 26, 1896, p. 512.

[85] Esquisse sur le nord-ouest de l'Amerique (1868), pp. 120–21 in new edition of 1901.

Thus J. H. Higby of Big Moose Lake, N. Y., writes in *Forest & Stream*, April 17, 1897, p. 305, on Adirondack Wolves: "In 1888 or '89 the writer and Fred Hess, a well-known guide, killed a large Wolf on the head of Fourth Lake, Fulton Chain. He had come out on the ice about 40 rods and lain down in the snow to await the arrival of another Wolf that was after a Deer. We saw him and went out and killed him. That was one of the last."

"On another occasion," says Mills, "I saw 3 Wolves drive a Deer from a canyon and so direct its course that it emerged where the way was covered with a deep snowdrift. As the Deer floundered through the soft snow, it was pounced upon by a fourth Wolf, which was lying in wait at this point."[86]

George Shiras 3d is of the opinion that the Gray-wolf is a still-hunter. He stalks his prey till within reach of a rush and a spring. Most of the Deer that Shiras has seen killed by Wolves, were captured within 50 yards of the first jump.

Mark Robinson, Ranger of Algonquin Park, has given an interesting account of a still-hunt that he partly saw and partly read in the snow.

"Going down Canoe Lake, we noticed the lone track of a medium-sized Wolf that had visited our old baits, showing his contempt in the usual manner. Reaching the foot of the lake, I was to follow a ravine to the top of a large hill covered with hardwood timber, while my companion was to follow around the base of the hill and come up from the other side. He followed the trail of the lone Wolf which was going in his direction. I walked slowly up the ravine until near the crest of the hill, when I heard a scutter in the snow. Looking around, I saw an object move and drop out of sight. Hurrying to the top of the hill, I saw a Deer raise its head and drop it again. I walked over and found it just dead. It had been killed by the lone Wolf.

"From about 200 yards distance my companion called to me, saying the Wolf had jumped a Deer. I replied that it had killed it where I was standing. We came back together and found the Wolf had been about 40 paces from the Deer when it commenced to rush at it. The Deer had at first apparently jumped up into the air, and did not appear to run well until about 50 yards were covered, then they ran side by side for about 120 yards, when the Wolf hamstrung the Deer, making a cut almost as clean as a knife. A few more short bounds and the Wolf sprang upon the Deer's back, breaking the back at one bite, tearing the flesh so that the kidney could be seen, then he had attacked the throat, when, no doubt, he scented danger and quickly made his escape into the deep hemlocks.

"The Deer was a fine healthy young buck about 3 years old. As far

[86] Watched, p. 143.

PLATE LVIII.—OIL STUDY OF WOLF HEAD
New Mexico, 1893, by E. T. Seton

as we could see, everything was in favour of the Deer travelling fast—good bottom, about 8 inches loose snow and slightly down grade."[87]

These methods, however, are for the swift-footed Deer. In dealing with range Cattle in the open, the Wolf uses different means of attack. Enos A. Mills describes one that he had the good luck to witness:

"On one occasion," he says, "in southern Colorado, I saw a herd of Cattle standing in a circle with their heads outward. A number of Wolves were attacking them. By leaping unitedly—first at one, then at another—they finally frightened one victim out of the circle of safety. He was at once driven away from the herd, and in a short time the Wolves had disabled his hindlegs and pulled him down."[88]

The Wolf is still-hunter or marathon chaser, as seems best calculated to serve his purpose, and curious light on his ways is afforded by these remarks from J. B. Thompson of Chicago. He writes from Doniphan, Mo.:

"There is hardly a hunter in the swamps who has not seen or killed a Wolf at some time or other while calling turkeys in spring, for if there are any about, they often respond to the call in anxious anticipation of a capture of some fat gobbler or hen."[89]

An extraordinary case of Wolf cunning is given by E. Haslam, B. C., in *Forest & Stream*, Sept., 1921, pp. 406-7. It is related of a traveller named Calhoun.

"He and his two companions were hunting in northern Alaska and while snowshoeing, came near a lake which was frozen over, when they observed 3 Wolves travelling in an opposite direction to themselves. They estimated that if they maintained their course, they would pass at a distance of perhaps 40 or 50 yards. Our friends were partially hidden from view by snow and scrubby brushes. As the Wolves approached nearer, coming in single file, Calhoun noticed a raven circling at a short distance above them.

"When the Wolves were nearly opposite them and the men were about to fire, they saw the centre Wolf suddenly swerve a little, and his body stiffen, and his legs, seemingly paralyzed, slither from beneath him, and in an instant he was lying stark and stiff on the ice. The other two Wolves kept right on without slacking their pace or turning their heads to glance at their companion. Needless to say, the hunters lowered their guns, and stood watching the scene with keenest interest.

"The raven, evidently more interested in the still form lying on the ice than in his departing brothers, alighted at a little distance, after circling a

[87] Forest & Stream, July 6, 1912, pp. 9-10.

[88] Watched, p. 145.

[89] Forest & Stream, Feb. 13, 1909, p. 253.

few times above the prostrate animal. He hopped and pecked at the Wolf, and the next peck would probably have been at the Wolf's eye, but with a swift movement of the head, the cruel jaws of the waiting Wolf snapped upon the hapless raven and he was killed."

Fishing

That the Wolf will eat fish no one doubts; but that he will turn fisher and poacher is a new idea. Nevertheless, Bernard R. Ross records a remarkable case in point. The evidence is purely circumstantial and not complete at that, but Ross was a good naturalist and evidently believed the case proven:

"In the month of May," he says, "when the holes cut in the ice do not freeze up, the fisherman at Fort Resolution, on visiting his trout lines, set at some distance from the Fort, discovered that several had been visited; the lines and hooks were lying on the ice, as well as the remains of a partly eaten trout, and a Wolf's track was observed about the place. The fact was the Wolf had hauled up the lines and helped himself to what fish he required. This occurred again and then ceased, the animal having been probably driven away by the Dogs of the Post."[90]

Thomas Anderson, Hudson's Bay Company factor at Fort Smith, says he has no doubt that this took place exactly as described by Ross.

Storage Habit

The habit of burying surplus food seems to be common to all the Wolf tribe. Roland D. Carson writes me of the Wolves in the Philadelphia Zoo: "Our males and females often bury surplus food, but the females have not been observed to do so more than usual just previous to the birth of the young."

Captain Craine's half-wolf train-dogs, if not hungry, would bury their food, and water on the place or even on the food. This latter performance is explained in the Wolverine chapter.

Property Instinct

These train-dogs afford much light on the ways of their wild kinsmen. One of them will watch his cache all day and in its defence fearlessly attack another that ordinarily he was afraid of. The big Dog rarely presses the point under these circumstances, but acts as though he knew his cause was weak. This beginning of property law is of cardinal interest.

[90] Fur-bearing Animals, Mack. R., Can. Nat., Jan., 1861, p. 10.

These hoards may be of vital service to the Wolf, but the instinct, as at present developed, is very crude and scarcely to be compared with the fine providence of Beaver and Squirrel.

The Wit-match with Man

When the Buffalo swarmed over Western America from the Alleghanies to the Rockies, and from Great Slave Lake to Central Mexico, their herds were followed by bands of Buffalo-wolves that preyed on the weak and helpless. As the Buffalo disappeared the Wolves were harder put for a living. When the last great Buffalo herds were destroyed and the Wolves were left without their usual support, they naturally turned their attention to the Cattle on the ranges.

The ranchmen declared vigorous war against them; traps and poison were imported in vast quantities, a bounty was offered for each Wolf scalp, and every inducement held out to Wolf-hunters.

In those days the Wolves were comparatively unsuspicious, and it was easy to trap or poison them. The result was that enormous numbers were killed in the early days of 1880 to 1888 or 1889; so many, indeed, that the species seemed on the verge of extinction. The remnant of the race continued on the foothills of the Rockies or the Badlands, but they were so rare as to be no longer a factor in the Cattle question. Then new knowledge, a better comprehension of the modern dangers, seemed to spread among the Wolves. They learned how to detect and defy the traps and poison, and in some way the knowledge was passed from one to another, till all Wolves were fully possessed of the information. How this is done is not easy to say. It is easier to prove that it *is* done. Few Wolves ever get into a trap, fewer still get into a trap and out again, and thus learn that a steel trap is a thing to be feared. And yet all Wolves have that knowledge, as every trapper knows, and since they could not get it at first hand, they must have got it second hand; that is, the information was communicated to them by others of their kind.

It is well known among hunters that a piece of iron is enough to protect any carcass from the Wolves If a Deer or Antelope has been shot and is to be left out overnight, all that is needed for its protection is an old horseshoe, a spur, or even any part of the hunter's dress. No Wolf will go near such suspicious-looking or human-tainted things; he will starve rather than approach the carcass so guarded.

With poison, a similar change has come about. Strychnine was considered infallible when first it was introduced. It did vast destruction for a time, then the Wolves seemed to discover the danger associated with that

PLATE LIX—WOLF STUDIES
By E. T. Seton

particular smell, and will no longer take the poisoned bait, as I know from numberless experiences.

It is thoroughly well known among the Cattle men now that the only chance of poisoning Wolves is in the late summer and early autumn, when the young are beginning to run with the mother. She cannot watch over all of them the whole time, and there is a chance of some of them finding the bait and taking it before they have been taught to let that sort of smell-thing alone.

The result was that the Wolves increased during the late 80's. They returned to many of their old hunting grounds in the Cattle countries, and each year they seemed to be more numerous and more widely spread, thanks to their mastery of the new problems forced upon them by civilization.

But the growing extent of ravages led to higher bounties, so that many men became Wolvers, that is, professional Wolf-hunters. New means of destruction were invented, but by far the most effective of these was the plan of locating the dens.

In the northern Cattle ranges, the young are born while yet there is snow on the ground, and it has proved quite easy to back-track the old Wolves, discover the den, destroy the brood, and later the old ones, for they continue to hover about till shot. Thus their parental devotion is made the means of their destruction.

Such methods have resulted in a steady diminution of the Wolves, till now the time is in sight when the Gray-wolf will be extinct on the Cattle ranges of the Western States.

The Way of the Wolver

Wolves are so rarely seen that shooting is not to be relied on as a means of keeping them down.

Hunting with Dogs has been carried on with fair success, but it requires a composite pack of running, tracking, and fighting Dogs, as well as the best of Horses, so that it is somewhat expensive.

In the early days, the Indians captured many Wolves in pitfalls. The following, from Henry's "Journal" (p. 322), bears on this:

"We had now [south of Turtle Mountain] a well-beaten path, but were several times in danger of breaking our necks in deep pits which the natives had dug in the path to catch Wolves and Foxes in winter. Some of them are 10 feet deep, hollowed out to a space about 30 feet in circumference, whilst the entrance is no wider than the footpath and about 5 feet in length. These holes are covered with dry grass at the season when Wolves are good, and every morning are found to contain some of those animals. In summer

the grass grows strong and high about the mouths, entirely concealing them, until one arrives upon the very brink, and is in danger of tumbling in headlong."

Poisoning, once quite easy, is now very hard to practise, since the Wolves have learned the smell and dangers of strychnine. At one time, I killed Wolves with poison, and invented new methods that were uniformly successful. But the need of such things is gone, and I shall disseminate no more information to help in the extermination of these wise and wonderful creatures.

As a picture of Plains life, in the old days, and a method of killing Wolves that is now utterly impossible, thanks to the wisdom of the modern Wolf, I quote from the story of my old friend, "Yellowstone Kelly":

"About 22 years ago," he says, "Flat Willow Creek which runs south of the Judith Basin, Montana, into the Musselshell, was a pretty wild-looking country We pitched camp there one winter's day in a very respectable and commodious-looking Sioux war-house, built, teepee fashion, of dry poles and chinked fairly tight with broken slabs and sticks of cottonwood. We were after Wolves, Foxes, and Beaver.

"In the afternoon I sallied out by myself to take a look at the country. Before me were the dark gulches of the Musselshell, topped by cedar-covered buttes that looked far away toward the Yellowstone. Crossing some little prairies and creeks, I came to a flat that had once been the home of a village of Prairie-dogs, and on a rise beyond it I saw a Buffalo cow standing alone.

"I manœuvred for some time to get close enough for a shot. When I looked again the cow had lain down. The point was rather difficult of approach, and I was crawling along low ground, when I saw 2 large Wolves trot up to the cow in feint of attack, the cow getting up and lowering her head to repel them. It was then that I saw that she was lame in one leg. The Wolves sat down in the most impudent way and watched her. I presume these Wolves had followed the cow some distance.

"After a while they left the cow and trotted around to where I was partly concealed, and surveyed me with great curiosity from several points, coming within 15 yards or nearer. I made no move for fear of disturbing the cow. I did not care about the Wolves, although they were about as large as any I had seen. I have never heard of Wolves attacking people in the Northwest. They soon left me and returned to the cow, and edging a little closer, I pulled up my .44 Winchester and shot the cow back of the shoulder. She fell a short distance off, and approaching I saw, about 100 yards away, some standing, some sitting, about 20 or more large Wolves.

"They formed a very pretty picture on the gray prairie, that was almost

wind-swept of snow. They were not the dirty, gray Buffalo-wolf, but seemed to be more of the Timber species, with tawny markings, some approaching to creamy white. What surprised me was their utter unconcern as I came into view. They were lined up in a row, as if they had been bidden to a feast, and were not particular as to the manner in which it was served. I proceeded to satisfy them. Laying my gun and belt on the ground, I disembowelled the cow, cut and slashed the meat in the usual way, and loaded the carcass with about three-eighths of an ounce of strychnia. My audience took an unusual interest in the work of preparing this bait, but scarcely moved from their first position.

"I surmised that this was not the first time they had posed as spectators of a meat-carving diversion, and that they had probably followed the Indians on a Buffalo hunt. Though uninvited guests, I felt that their appreciation should not pass unrewarded. When I had finished cutting up the Buffalo, I gathered my gun and belt and retired from the scene as I came.

"A day or two later as we rode that way, their beautiful carcasses covered the prairie, and we secured 22 fine pelts."[91]

The undoing of the last Wolf in the Adirondacks, as related by Fred A. Potter, gives a series of vivid pictures showing the life-and-death game that Wolf and trapper play.

Although Wolves were supposed to be extinct in the North Woods, sufficient tracks and a possible Wolf howl were noted in the fall of 1893. In mid-November, Reuben Cary got a long shot at the Wolf as it crossed the open ice of a lake.

Next day he found where it had killed a Sheep, and about 3 o'clock saw a big Wolf slink away from the carcass. Rube got a far shot, slightly wounding the Wolf. He and his friend followed 5 miles in vain. That night they set a trap by the dead Sheep. Next morning they found a big bald eagle in the trap, but no signs of a Wolf.

For a couple of days, Rube kept away from the trap. Then a "fool Dog", a "no-'count" spaniel that had been left by a summer visitor, went prowling on his own and got in the trap. "When Rube came over the next morning, the Dog was in the trap with a broken leg, and Wolf tracks all around him in the fresh snow. A merciful shot put an end to his suffering. Seeing the Wolf tracks in the snow, Rube moved the remains of the Sheep over near the Cattle corral and reset his trap there. He took the dead Dog and threw him in a pile of brush across the road. Expecting results, he went out early the next morning, but, to his surprise, found that the Sheep and trap were undisturbed, but that the Wolf had been feeding on the

[91] Forest & Stream, Feb. 20, 1897, p. 145.

dead Dog. He moved the trap from the Sheep carcass to the brush pile, and set it where the Wolf had climbed up after the Dog.

"That night it snowed about a foot, and the next morning the storm was unabated. However, Rube put on his snowshoes and set out for the clearing. His persistency and perseverance were rewarded, for when he came over the hill into the clearing, there stood a tremendous, gaunt Gray-wolf, one front foot in the trap. He had put up a terrific fight for his freedom. The ground was torn up in all directions and the snow trampled down, but the old Newhouse trap had held. Rube said the Wolf hung his head and acted sheepish, as though he were ashamed of himself for getting caught.

"This was the last Wolf caught or killed in the Adirondacks. He was mounted, and is now in the private collection of the late General E. A. McAlpin, of Brandreth Lake."[92]

[92] Forest & Stream, Feb., 1923, p. 89.

PLATE LX.—CAPTIVE WOLVES
Photographs by E. T. Seton

Famous Wolves

Just as there are geniuses and heroes among men, so there are extraordinary individuals among Wolves. These have always interested me, and I have endeavoured to record the lives of such as came to hand.

The pages of European history are picturesquely varied by accounts of wonderful Wolves that appeared from time to time, unusual specimens that left frightful records of destruction among men and Cattle.

One of the most celebrated was *La Bête de Gevaudan* which lived in Central France about 1760 to 1765, during which time he devoured 93 persons and mangled some 30 more, before he was destroyed. He stood 35 inches at the shoulder and weighed 165 pounds.

In our own country we have no lack of famous Wolves—heroes, for they are the unusually gifted individuals that have appeared, bravely fighting with unusual success their own hopeless fight against us. One of the first of them that I met was the *Winnipeg Wolf*. In March, 1882, while coming to Winnipeg from St. Paul, I saw a sight that stirred my blood. As the train flashed through an opening of the poplar woods south of St. Boniface, there stood a great splendid Gray-wolf, erect and defiant, surrounded by a motley rabble of town Dogs, big and small. A small Dog was lying in the snow near him, and a big Dog was bounding about doing some magnificent barking, but keeping his safe distance. The train passed and I saw no more.

A dog-driver was killed next winter on the ice of the Red River while bound for Fort Alexander. The team were big fierce Huskies, and he was a strange driver. It was thought that he had struck at one of them with the whip, it had snapped back, and he, in retreating, had fallen, whereupon the four savage creatures had set on him and ended by devouring him. The counter theory was that he had been killed by a Wolf or Wolves, of which the Dogs are notoriously afraid. The latter explanation found favour only with the Dogs' owner, for the reason, people said, that he did not wish to lose his valuable team.

A large Wolf was seen several times afterward about the city, and at length was killed near the slaughterhouse, some said, by poison, Dogs, guns, or all three. This was a male and weighed 104 pounds. It was mounted by W. R. Hine, the taxidermist, and shown at the Chicago Exposition of 1893. This interesting relic was one of the valuable specimens lost in the Mulvey Grammar School when the building was destroyed by fire in 1896.

I have, of course, no evidence that in each case it was the same Wolf, but in writing the story of "The Winnipeg Wolf" I took a writer's liberty in making them so. The other adventures ascribed to him really belonged to other Wolves in distant regions.

In the story of "Lobo," I assumed a similar freedom. I ascribed to one Wolf the adventures of several, and I selected for him the most heroic exterior I could find in fact. But the final chapter recording his capture and death is given exactly as it happened, and was indeed the inspiring motive of the story.

At Carberry, Man., in 1897–98, a huge black Wolf appeared. He killed many Sheep and calves and spread terror among the parents that had children going to school, but he never even threatened a human being. He was known as the *Black Buffalo-runner*. He was killed by Alexander Langmuir.

The White Wolf of Pine Ridge. While at Pine Ridge, S. Dak., in August, 1902, I was told by Dr. James R. Walker and many others, that during the past 3 years, the country between there and the Badlands (15 miles) had been frequented by an enormous White Wolf. The Wolves in this region were increasing and becoming so troublesome that a 25-dollar bounty was paid for each scalp, but double was offered for that of the White Wolf. It was a female, as it was once seen with 7 cubs. One of them was caught and staked out for a decoy, but the mother came by night, eluded the watchers, pulled up the stake, and bore off her offspring in triumph. She flourished until 1912, when at last she fell a victim to the Wolvers.

The Werewolf of Nut Lake. My old friend, George F. Guernsey, contributes an account of the Werewolf killed March, 1898, near Fort Qu'Appelle, Sask. It had slaughtered many Cattle and ponies; finally killed a 5-year-old stallion weighing more than 1,200 pounds.[93]

The Roosevelt Wolf. In 1897, when I hunted with the Eaton boys at Medora, N. D., over Roosevelt's old range, there was a giant Wolf in the neighbourhood, well-known and dreaded because of the havoc he made among the Cattle. He was sometimes called "Mountain Billy" on account of his headquarters being supposedly about Sentinel Butte. On the first night, when I camped near that landmark, we heard the deep howl of the great Wolf. The Dogs heard it too. They might run valiantly and noisily in the direction of an ordinary howl, but this one they seemed to know and fear. They growled ferociously, their manes bristled in response, but they did not leave the light of the camp-fire circle. Several times we followed what we believed to be his trail, but the hounds did not show any eagerness

[93] Recreation, Dec., 1898, p. 460.

to force an issue, and we saw no sign of him except some dead Cattle. Yet each night we heard that deep defiance from some not-far butte.

Since 1894 at least, this Wolf had been known and feared as a Cattle-raider. His monstrous footmarks were found many times along the Little Missouri and about the ranchman's door in the early morning, and the Eaton children saw him a number of times as they took their daily ride to school. But the men got no chance to shoot at him. The Dogs would not follow him, and for traps and poison he had a perfect contempt, expressed in the usual way.

Ten years he lived on this fat Cattle range, killing in that time many thousand dollars' worth of stock. Never, however, did he molest a human being. G. W. Myers, the cattleman, had the luck to get him at last. The following paragraph from the St. Paul *Dispatch*, April 1, 1902, announced the fact:

"The biggest Wolf story of the season comes from Billings County, where G. W. Myers was the lucky captor. Lupus in this case is reported to have been 7 feet 10 inches from his nose to the tip of his tail, and to have weighed 168 pounds, dead. His Wolfship is by no means the largest ever killed in North Dakota. He had been a long-time offender, and Mr. Myers had for years made a standing offer of $50 for his capture. It is estimated that he has killed $5,000 worth of stock. Within the last few months, he has killed a number of full-grown Cattle on Mr. Myers's ranch."

I wrote for confirmation of the statement. Willis Eaton replied at once that he believed it was quite accurate. Mrs. Myers also corroborated the story in the following words:

"The item is correct. The big Wolf passed just in front of our door many times at night, as we knew in the morning by the monstrous tracks. The men never ceased trying to get him by traps and poison. But he was too clever. Often, he went within a few feet of the trap, but he would back off and go around, as though he knew just what it was.

"By the river, there was a trail along a cutbank that he often used. At one end, it dropped some six feet. At this place, in the spring of 1902, the cowboys set a big trap, hidden in the dust. Pretty soon, he came along in the night, jumped down the 6-foot drop as usual, and landed squarely in the trap.

"We knew nothing of this at the time, but in the morning, on turning the Cattle out, they made a great stir, seemed frightened and ran about, bellowing near the cutbank. The boys went and found the big Wolf in the trap. He was held by two toes only, and would soon have got away, had they not come just then.

"He was so old that his teeth were worn off almost to the roots.

"My husband meant to send the skin to President Roosevelt, but it was found to be in bad condition, not fit to be tanned.

"It is not known positively that this and 'Mountain Billy' were the same, but 'Mountain Billy' also disappeared at this time."

It is to be hoped that some of our friends at Medora who have an interest in local history, will gather all the facts they can about the "Great Wolf," while yet they are available.

The White Wolf of Cheyenne had the curious experience of passing his youth in captivity. In the Denver *News* (Nov. 9, 1899), he is thus recorded:

"The great White Wolf has made his appearance after an absence of 3 winters. This great white marauder owes his names of *Buffalo Bill* and *Cody's Captive* to the fact of his being captured while a pup on one of the far northern Montana ranges by Col. Cody. The Colonel took his captive to the North Platte Cody Ranch, whence the Wolf, at a year old, escaped and made his way to the northward, finally locating near the Grover Cattle ranges.

"'Buffalo Bill' is proving himself more savage and voracious than ever."

The life and death of the *Custer Wolf* is thus detailed in the *Yearbook* of the U. S. Dept. of Agriculture, 1920, p. 297.

"This animal had ranged in a territory about 40 by 65 miles in extent in the vicinity of Custer, S. D. During the 6 or 7 years that he is known to have patrolled this territory, stockmen who suffered from his depredations estimated that he had killed at least $25,000 worth of Cattle. His killings were particularly exasperating, owing to the number of stock slaughtered at times when he appeared to go on a killing debauch, and to the savage mutilation of others—many cows having been killed for the sole purpose of devouring their unborn calves. Because of this and of the reputation which the animal gained for supernatural cunning in eluding hunters and avoiding skilfully placed traps and temptingly prepared poison baits, unusual efforts had been made by sportsmen to 'get him.' Stockmen, driven to desperation, offered increasingly large bounties, until there was a price of $500 on his head. Still he escaped.

"Some ranchers gave up hope and said they must board the outlaw until he died a natural death. Others, more sanguine, appealed to the local predatory animal inspector of the Biological Survey for the detail of a hunter, and one of the best trappers and shots in the service was sent on this mission. During several weeks of hide and seek, the Wolf displayed his uncanny cunning, but finally placed his front foot squarely in a trap baited with scent material obtained from another notorious Wolf that had been taken by the predatory animal inspector at Split Rock, Wyo. As he dashed

away, the trap drag caught firmly on a tree, but the swivel snapped. Dragging the heavy trap with him, the Wolf travelled a distance of 3 miles before the hunter, close on his trail, got a shot at 300 yards and ended his career of destruction. Many Wolves of similar cunning have been taken by Biological Survey hunters, but this animal was one of the most difficult to capture.

"The death of the Custer Wolf was hailed with delight by stockmen throughout the region where the depredations had occurred, and has added impetus to a movement for coöperation with the Department in order to meet more adequately the needs of the live-stock industry."

Some Strange Incidents

The Penalty of False Witness. In several different forms I have before me the tragic story of the Wolf that seemed to have made a false report on his hunting. It is one of those persistent ideas that are accepted by hunters in proportion to their familiarity with the animal. These testimonies should at least be kept in mind awaiting further light before they are rejected as baseless fabrication.

One of the latest and most detailed cases has come to me from Vancouver Island. It was told by Walter Harvey of British Columbia, and is vouched for by J. R. Lowther of Vancouver, as well as the recorder. It appeared in the *Daily Colonist*, Dec. 10, 1922.

"Almost 40 years ago, a small party, consisting of a surveyor and myself and 2 other men in an Indian canoe, went over from Vancouver Island to Cortez Island, at the north end of the Gulf of Georgia, to do some survey work there. It was late summer with fine weather, and clear enough to see some distance over the water and along the shore, though the gulf, as usual at that time of year, was overhung by a perpetual pall of smoke, caused by the forest fires, which were always going all over the coast in those days, generally beginning about the end of July and lasting until the first heavy rain.

"As we were nearing the shore of Cortez Island in the afternoon, I shot and killed a Hair Seal. As soon as we had landed ourselves and our outfit, I went to get the Seal, which was in very shallow water, as it was low tide. It was too late to do any work that day, and the camp was soon fixed up. I dragged the Seal up a piece and took off the skin, which was all I wanted.

"The body of the Seal lay on the shore about a quarter of a mile from the camp, and very soon after I got back and while I was stretching the skin, one of the other fellows said: 'Look! Look!' and pointed to the Seal. We all saw a Wolf dragging the Seal up the beach, and just above high-water mark he or she scratched a shallow hole and pulled the Seal into it and pro-

ceeded to cover it over with sand, shingle, bits of driftwood and seaweed and so forth.

"The Wolf then went off into the bush, and not very long after we heard a Wolf howling, but not quite like they do at night, somewhat shorter and more emphatic, and not so long drawn out.

"One of the men said he wanted the fat off the Seal's body to make 'Seal oil.' He was a little afraid of going after it, but, as we assured him that there were no cases of Wolves on this coast attacking men, he concluded to take a chance, and so he ran to where the Seal was buried, and, uncovering it, he made fast to its feet a short line he carried and hauled it over to the camp, and as it was easier to travel down on the sand at the edge of the now rapidly incoming tide, he came back that way and then up again to the beach above high-water mark and close to the camp, but a little beyond it, so that where he was messing about cutting off strips of fat and we stood watching him was out of sight from where the Wolf had buried the Seal.

"By-and-by the old man, the surveyor, called us loudly and hurriedly to come and 'look! look!' again, and we ran to the camp from which we saw a bunch of Wolves over close to where the Seal had been buried, digging furiously, and then they suddenly left off digging and ran down along the trail where the Seal had been dragged on to the sand to the edge of the water, where of course it was lost to them, because the tide had now come up over it. They ran to and fro for a few minutes. There were 5 altogether. Then again all of a sudden one of them fell on another and almost immediately the other 3 joined in. I jumped and got my carbine out of the tent and set off along the beach; but as it was not much use to shoot at over 100 yards at a wriggling animal, I kept on till I was about that distance from them, and by that time they had seen me and set off for the woods one behind the other. Only 4 left the beach. I fired several shots, but I was out of breath and rather excited as well, and I did not hit any of them. They disappeared and I went on to look at a dark shape lying flat on the edge of the water. Of all the filthy, ragged, bloody things I ever saw in my life, the remains of that Wolf, which apparently the others had killed out of spite, thinking it had deceived them, that was the worst."

In H. B. Small's "Animals of North America", 1864, p. 43, is a similar incident, and I have met with it elsewhere in several different settings.

Before we dismiss these reiterated testimonies as mere fairy tales, let me remind the critics of these facts and possibilities:

It is common for the mother Wolf to go seeking food, and, having found it, to hide it, and, without eating any of it, to go and return with

her own young ones. Knowing there was a chance for feasting, other Wolves might come too. Arrived at the place, hungry and quarrelsome, they might easily fight among themselves or attack the one whose feet were smeared with the blood of the expected quarry, or kill and devour some one of the gathering—maybe the original mis-guide and maybe not. It is usually hard to identify the individual.

The Folksiness of the Wolf

We have been fed for so many generations on tales of the Wolf's ferocity, treachery, rapacity, cowardice, and strength, that most persons begin with a wholly wrong picture of this most interesting animal.

Now that enough scattered fragments are offered to make, when assembled, something like a detailed and truthful record, we find that the old picture of the Wolf has little resemblance to the Wolf of fact. If we were to sum up the character of a typical modern Wolf, we should describe it as the shyest, wariest, wisest, of all our wild animals, the one least seen and most heard in proportion to its numbers, and endowed with tireless strength and endurance; that is, if there is such a thing as a typical Wolf—which of course there is not, any more than there is a typical man.

Let us remember, first, that the Wolf is simply a big wild Dog, getting his living by his wits and the strength of his jaws. But Wolves vary as Dogs do. The individual variation is so great that any sweeping generalization is sure to be wrong. There are brave Wolves and coward Wolves; there are fierce Wolves and shy Wolves. Yet this, one may safely state: all Wolves are highly intelligent, exceedingly shy, and hardest to trap of all the wild things that roam America to-day.

This refinement of wits, this modern education, is the result of our continual warfare against them. For the Arctic Wolf shows little of these traits, being in a land where man is rarely seen and is not continually hostile.

So we have declared bitter, exterminatory war on the Wolves. We have evolved a creature that for long has defied us.

There are Wolves in every part of continental Europe to-day where there is rough or wooded land to harbour them. In France alone, 8,000 Wolves were killed in the 12 years 1882 to 1894.[94]

In America the war goes on.

His Courage

Though repeated by most writers that Wolves are cowards, the sweeping statement seems not well founded. A Wolf never voluntarily attacks

[94] Dr. T. S. Palmer: Yearbook, U. S. Dept. Agri., 1896, pp. 64–66.

mankind, for the fear of man has been widely spread among its kind; yet a Wolf will attack and kill any Dog, even though much bigger than himself. A Wolf has often been known to face a whole pack of Dogs and carry off one of them in spite of the others about.

Richardson says: "During our residence at Cumberland House, in 1820, a Wolf which had been prowling round the Fort and was wounded by a musket ball and driven off, returned after it became dark, whilst the blood was still flowing from its wound, and carried off a Dog from amongst 50 others that howled piteously but had not courage to unite in an attack on their enemy."[95]

A full-grown Wolf will indeed fight any number of Dogs in self-defence, and will die without a thought of surrender. This is not cowardice.

Years ago, I was supplied with a thrilling tale of Wolf heroism by Lieut. E. L. Munson, U. S. A.[96] He had gone a-hunting with 9 big powerful wolf-hounds, the pick of several packs, trained from puppyhood to kill Wolves. Any one of them was as big and heavy as a Wolf and full of fighting courage. In the first snow of the season on the Big Sandy Creek, they struck the trail of a large Wolf and gave chase.

A Jackrabbit was jumped, and 6 of the Dogs were misled into following that flying phantom, as the hunter and 3 hounds sighted the Wolf.

The hounds were much fleeter than the Wolf, or perhaps he did not try to run very fast. He reserved his strength and made for a rugged cutbank where he had rear and flank protection. Here he faced about. The 3 fierce hounds arrived in order of speed. One by one he received them, and gashed them to helplessness with his great fangs or tumbled them over the cliff. Then, seeing the rider coming with guns, and more hounds approaching, he bounded lightly over the ridge, and was lost in the safety of the brushy coulees.

On the other hand, note the account given by Audubon. He saw a she-Wolf and her 2 cubs trapped in a pitfall near Vincennes, Indiana. He described them[97] as absolutely unresisting, abject in their submission to the trapper who leaped alone into the pit, hamstrung them, tied their jaws, and threw them out to be worried by his Dogs.

My own observations do not agree with this at all. Six times in my trapping life among the mesas of New Mexico, I have had the experience of coming to my traps and finding in them a grim and grizzly Gray-wolf. In each case the Wolf was fiercely defiant, asking only the privilege of getting

[95] F. B. A., I, p. 64.

[96] Recreation, March, 1898, pp. 171–73.

[97] Q. N. A., II, p. 129.

PLATE LXI.—AN OLD HERO

"Come one, come all! This rock shall fly
From its firm base as soon as I!"

—*Sir Walter Scott.*

at me for a finish fight. In each case but one, the scene had to be ended with a rifle ball. In that one, the big brave creature died in captivity—so far as I could tell, of a broken heart. These were the Wolves of the Currumpaw pack, and these things I have set forth with but little embellishment in the story of "Lobo."

Still stronger evidence of the Wolf's valour is given at considerable length by John B. Thompson of Chicago.[98] Writing from Doniphan, Mo., he tells of the continual losses sustained by the Star Ranch Company, of Neelysville, Mo. At last they mported a pack of Wolf-hounds, and by dint of driving and shooting from stands, they succeeded in killing a number of the "Swamp-pirates."

Then the Dogs, carried away by their success, thinking that they themselves were doing it, took to hunting on their own account, and the pack began to dwindle. At first it was supposed that the neighbours had stolen the missing Dogs. But evidence in abundance came to them that the Wolves were the cause of the losses. Of Dogs, unbacked by guns, the Wolves had no fear. Killing Dogs seemed to be their favourite sport, once they found them away from the help of man.

Then the ranchmen learned the lesson that has been learned a thousand times before: that no Dog, however big and strong, has the slightest chance against a Wolf of average powers; and the Wolf at least knows it and cheerfully faces or even courts the combat.

Not an old hunter in the West but could tell some similar tales, testimony to Wolf prowess when at bay or hunted by Dogs without gun support.

An extreme and curious case was told me in 1907 by Chief Trader Thomas Anderson, as follows:

Wolves were very common on Hay River last December. An Indian travelling there had a puppy Dog trotting behind his sleigh; a Wolf dashed out of the woods to seize the pup. The Indian fired, hitting the Wolf somewhere in the head, but it ran off. The Indians went to see and found some of the Wolf's teeth on the ice; he had hit it in the mouth, blowing out the teeth. Anderson believed this Indian to be telling the truth.

Nevertheless, individuals vary so much in this highly specialized animal, that we may expect to find some that are downright cowards, as well as others of heroic bravery, just as among Dogs we find Spaniels and Airedales. The one described by Richardson as coming alone into camp to slaughter Dogs may have been a noted desperado of his tribe.

Exceptions to the rule may be accounted for precisely as in man; bodily

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[98] Forest & Stream, Feb. 13, 1909, p. 252.

well-being is an essential of physical courage. Richardson says of the Barren-ground Wolves:

"When reduced by famine they are very abject and unresisting. Mr. Bell once, while residing on Mackenzie's River, caught a full-grown but famished Wolf in a Marten-trap tied to a small log which it had not the strength to carry away. He went to the Fort for a line to lead it home, and the children who accompanied him back assisted in bringing it in by pushing it on from behind. It made no resistance and suffered itself to be tied quietly to the stockades of the Fort. The experiment of taming it was not, however, made, and after the curiosity of the people was satisfied, it was killed."[99]

Men talk of their own sportsmanship and fair play and of the ferocity and cruelty of the Wolf, and then perpetrate and publish for the delight of humanity the following which I quote from a recent sporting magazine:

Two Wolves had been trapped near a cow they had killed in the Rogue River Valley, Ore. "Several of the neighbours were notified and came flocking in, bringing guns and Dogs.

"It was determined to have some lively sport with the Wolves and Dogs. All know what a savage, cruel fighter the Gray-wolf is. One can stand half a dozen Dogs off and cut them in pieces. In this case, it was proposed to give the ferocious captives no show for their lives and no chance to do any more damage. Accordingly, they were caught with ropes and very securely tied so as to be helpless. Both were muzzled so they could not bite, and their hamstrings cut. They were then untied and turned loose, though they could not escape. Immediately the big pack of Dogs pounced upon the two Wolves, and in a short time both were torn to pieces."

The Dogginess of the Wolf

A similar story to that told by Richardson is furnished from Manitoba; in this case with a wholly different ending, but emphasizing still more the dogginess of the Wolf.

The Rev. J. A. McLaughlin, of Berens River, Lake Winnipeg, wrote me, March 9, 1893:

"Wolves are quite numerous here this winter, but do not seem to band together to any extent, and are not, so far as I know, dangerous. Last week, one of the Indians, on going to his cache, where he had been doing his fall fishing, found a splendid Black Wolf in a trap. He tied his mouth with a line, took him out of the trap, hitched him up to his Dog train, and made him help haul in the load of fish. The Hudson's Bay Company officer here had

[99] Arctic Search Exped. (of 1848), 1851, II, p. 87.

him chained up at the Fort, and intends trying to make a cross with one of his Dogs. I have seen a number of Wolves, but none like this specimen. The fur is exactly like a Silver-fox in colour, thick and beautiful. The ears are much more rounded than usual, giving the head more of the appearance of a Bear than a Wolf. I have handled it, but there is never any sign of crossness, and no attempt at biting." (Mr. McLaughlin was drowned in Lake Winnipeg, Sept. 12, 1903, while faithfully doing his work.)

D. T. Hanbury, on his journey from Selkirk to Norway House, Feb. 26, 1899, says: "At this place [Berens River] I had the novel experience of riding in a sleigh drawn by a team which included a Wolf. This animal was muzzled and, though rather savage, worked well. I was told that a pure Wolf does not retain its stamina in captivity, but a half or quarter cross makes a most useful animal."[100]

Playfulness of the Wolf

Many years ago, when in Teesdale, Yorkshire, England, I was told of a certain place there called "Wolf Lake," although there is not, and never has been, any water near, but my friend, James Backhouse, informs me that it was originally "Wolf Lek," that is, Wolf Playground, the place where the Wolves were supposed to play (Anglo-Saxon, *laeken*, to lark or play). This merely added to the mystery but led me to seek for social amusements among Wolves.

Train-dogs, that is, tame Wolves, howl much on moonlight nights in winter, and in a less degree at other seasons. They do not sit around in a circle as has been stated, nor have any accompanying ceremonies been seen. They howl usually when some loud noise or one of themselves begins it. These remarks apply in a measure to Wolves. This nightly chorus was the only social amusement among these animals that I knew of at the time.

But new light arrives, as so often, from those smoky, leather-clad, unpublished volumes called "old-timers."

Dr. Woods Hutchinson writes: "Old ranchmen upon the Cattle ranges tell me that Wolves get together in quiet places among the hills in the autumn, just for regular games of tooth-play and romping. One of them told me that he was out looking for lost Horses one day, up in the foothills, when he suddenly saw the head of a big Gray-wolf stick up for a moment over the edge of a 'blow-out,' or great sandpit scooped out by the wind. He had only his revolver with him, but as the 'Grays' are terribly destructive to colts and young Cattle, he galloped off down a side valley at once, till he was well down from the 'blow-out,' so that his scent would not be carried

[100] Sport & Travel in the Northland of Canada, 1904, p. 6.

toward the Wolf, then hobbled his Horse and worked his way across the ridges till he finally crawled on his hands and knees up to the edge of the hollow and peeped over, thinking to surprise Mr. Wolf. But it was his turn to be surprised, for there not 30 yards below him were 7 great, shaggy brutes, each nearly as big as a Newfoundland Dog, rolling and tumbling over each other and showing great rows of glisten'ng teeth, that looked as long as his finger.

"He said it struck him, all of a sudden, that it wasn't a very good day for Wolf-hunting, after all, and he rolled down the side of that hill and scuttled across to where his Horse was hobbled, as fast and as noiselessly as his legs would carry him. Fortunately, the Wolves were so well pleased with each other, and so busy with their game, that they didn't see or hear him at all, for if they had, and had caught him before he reached his hobbled Horse, there would have been nothing left of either of them, except the wood of the saddle and a few of the largest bones."[101]

A still more satisfactory account is supplied by Enos A. Mills, the nature guide. Describing the play of animals, he says:

"A tumbleweed in a Wyoming windstorm furnished the plaything in an exciting game for a pack of Wolves. I watched the play from the shelter of a ravine. Flying before the wind, the tumbleweed bounded a ridge with a huge Wolf leaping after it. Closely pressing him came a pursuing pack of twenty. A lull in the wind and the tumbleweed, colliding with the leading Wolf's head, bounded off to one side. Other Wolves sprang in the air after it, but the wind carried the tumbleweed along and the entire pack rushed in pursuit.

"This big, much-branched, ball-shaped weed was two feet in diameter. When it touched the earth the gale swept it, bounding forward and rolling over and over, across the brown wide plains. After it came the closely massed Wolves. Just as those in the lead were nearing this animated plaything it was caught by a whirlwind and pulled high into the air. Two Wolves leaped and tried to seize it. Several sat down and stared after it as though it were gone forever. The tumbleweed commenced to descend, but buoyed up by the air it came down slowly. The pack surged this way and that, as the weed surged in descending, to be beneath it; and while it was still several feet above them a high-leaping fellow struck it head-on and sent it flying to one side. It disappeared in a hollow and the Wolves vanished after it. Puffs of dust and occasionally the high-bounding weed itself told me that the game was on as vigorously as ever.

"The next act opened with the re-appearance of one of the Wolves

[101] The Open Court Mag., 1904, pp. 217–18.

running up a slope and looking back over his shoulder. Up in the wind, a little behind him and off to one side, came the tumbleweed. The Wolf turned, leaped at the weed, struck it with his breast, and knocked it vaulting away. The pack, rushing into view, swerved as one to seize or strike it. Each player was intense and all were as serious as football players. A sweeping gale carried the whirling weed forward again. It came in contact with a rock outcrop and rolled to one side. The whole team rushed at the weed and tumbled pellmell around it.

"In this general mix-up two of the Wolves started a fight. The pack joined in the row, struggling and rolling about. A pair occasionally clinched, reared into the air, and fell back. The badly mashed tumbleweed with crippling bounces went on with the wind across the wide, dust-blown plains. Suddenly the fight stopped, the panting Wolves stood for a few seconds looking at nothing, then scattered. The play was over. Had it started, I wondered, as unceremoniously, as suddenly, as it stopped?"[102]

At Canoe Lake, Algonquin Park, Aug., 1922, I saw one of these Wolf-playgrounds that was in regular use. It was a 20-acre stretch of gravel in the woods, bared of trees by the railway contractors. Here the Wolves met often to play, as was attested by the abundant tracks, and occasionally by the noise.

"Playful as a puppy Dog" is an old familiar phrase, and no more true than "playful as a young Wolf," with this surprising emphasis: the Wolf continues playful far longer than the Dog, throughout his life to some extent.

Wolves and Renegade Dogs

Many cases are on record of renegade Dogs joining the Wolves; or it would be more just to say, repentant and converted Dogs rejoining their own wild kinsfolk, going back to their own people.

The Eskimo or Husky Dog is understood to be simply a domesticated Wolf, mixed with a strain of some other Dog stock. The readiness of the Wolf and Husky Dog to cross is noted by all writers on the subject. Henry, in his famous "Journal on Red River," refers to this as a regular thing, and gives a very graphic account of the way in which the female Dogs were unwittingly made to play Delilah and betray the he-Wolves into the merciless hands of their human enemies.[103]

A similar account is given by Richardson for the female Wolves about Cumberland House.[104]

[102] Advent. Nat. Guide, E. A. Mills, pp. 201–03.

[103] Journal, p. 166.

[104] Franklin's First Journey, 1823, p. 90.

The reverse situation has been recorded by Dr. W. Mitchell in *Recreation* (April, 1898, p. 314).

"For several years," he writes, "a female Wolf, lame in one fore-foot, was known to haunt a certain locality in southwestern Alberta, a short distance north of the international boundary line, and isolated by several miles from her own species. Her destructive propensities, as the mangled remains of an occasional calf amply testified, made her unpopular, and many were the expedients resorted to, by ranchers and others, to rid themselves of her.

"Finally, however, the fact became known that friendly relations existed between her and an English setter Dog, owned by a rancher near by, and that she was wont to visit his master's premises during the early hours of the night, with considerable regularity.

"Acting on this knowledge, on a recent occasion, this Dog in question was picketed out, within easy range of a neighbouring calf corral—his owner, meanwhile, gun in hand, secreting himself therein. As the stillness of night began to pervade the scene, the Wolf was heard beckoning the Dog in a friendly way to join her. She cautiously approached, and when within convenient range, a bullet brought her career to a close. . . .

"The following measurements were taken: Length, unskinned, from tip to tip, 5 feet 6 inches; chest, 27 inches; weight, 65 lbs. It will thus be seen that throughout she was an undersized specimen, and the fact that she had been a lifelong cripple, owing to the absence of all save one toe on the right fore-foot, may have had something to do with this condition."

Two large Dogs, supposed to be the offspring of a Wolf and a Husky, lived about Kildonan, Man., and terrorized the district for about a year in the early 80's. One was gray one red or liver colour. No one owned them; they lived wild. George Fraser, of Winnipeg, my informant, fired at them several times with a shot-gun, without visible effect. One day he got a close chance at the red one with No. 5 shot; the beast got away, but never was seen again; probably it died.

Says Grinnell: "It is commonly stated that Wolves mate with Indian Dogs, and it is certainly true that the old-fashioned Indian Dog often had a very wolfish look about him. Such crossing may take place by accident or possibly by design of the Indians, as stated by some travellers; but though I have been much in Indian camps, for a good many years past I never saw anything to lead me to believe that the Indians themselves tried to bring this about.

"That Wolves and Dogs will cross is certain. Twenty years ago at a ranch just west of the head of the Dismal River in Nebraska, there was a big black Dog which was the father of 7 pups by an old Gray-wolf. These

pups and their mother were notorious through all the country there for the Cattle which they killed, and they were often seen doing it. If I recollect aright, 3 of the pups looked like Gray-wolves and 4 like the black Dog. All of this interesting family save one were at length shot by Capt. L. H. North, the manager of the Cody and North Cattle ranch."[105]

One of the most interesting accounts comes from Cheyenne, Wyo., where one day arrived in triumph Charles E. Goyen, foreman of Horse Creek ranch, bearing the pelt of a huge gray she-Wolf. The story is thus told by W. A. Bartlett in *Forest & Stream*, March 12, 1910, p. 416:

"For several weeks Horse Creek ranchmen have been trying to kill a large she-Wolf and 2 Dogs which have been travelling through that country killing stock and causing other depredations about the ranches. One of the Dogs formerly belonged to Mr. Britton, and he captured the animal at one time after it went wild, but members of his family dissuaded him from shooting it. Other ranchmen have since vainly tried to shoot or poison the Dogs. The domesticated wisdom of the Dogs and the ferocity of the big Wolf made a hard combination for the ranchmen to overcome.

"Yesterday foreman Goyen located the destructive trio on the prairie, and being mounted on a swift Horse, gave chase, and after a hard ride of about 10 miles, he succeeded in running them down and roping the Wolf. He could have shot the Wolf, but knowing that the Dogs would follow her, he decided to lead her to the ranch where all 3 could be killed. With the rope well-fastened about the Wolf's body he pulled her into the ranch and the Dogs followed. All 3 were then shot.

"The Britton Dog when killed still had a bell upon it which the owner is said to have placed there to find out if the Dog was doing any damage when away from the ranch, and other ranchmen say they have heard the sound of this bell when stock was being killed.

"Wolves have been killing stock in the Horse Creek Valley, but the Dog trio was the worst of any bunch, and ranchmen rejoice over their extermination. . . .

"A similar instance of where a Wolf has joined Wild Dogs in attacks on stock occurred in the same district a few years ago, the Wolf finally being caught by a trapper at Adamson's ranch."

As Train Dog

W. F. White, the taxidermist of Winnipeg, informed me about 20 years ago, that he had no difficulty in selling living male Wolves, as they could be utilized to cross with and improve the train Dogs.

[105] Forest & Stream, Dec. 26, 1896, p. 512.

Henry also speaks of saving young Wolf cubs to be used for the trains.[106]

Captain Dick Craine, of Petoskey, Mich., tells me that he spent 9 years among the train Dogs in Alaska and Yukon, owning and handling in that time 200 Dogs. Among these he had 3 full-blooded Wolves, also used as train animals. Many half-breeds, of course, were among the Dogs, and all are more or less of Wolf blood.

The Wolf, he says, is not so good as a train Dog. It is strong enough but always more or less shy, watching its driver as though cowed, and shrinking from the touch of the hand.

The Hudson's Bay Company traders in the Great Slave Lake region tell me that Wolves are commonly tamed and used for sleigh Dogs, but play out sooner than the regular train Dogs.

The only tangible difference between a Husky Dog and a wild Wolf is in the tail. A Wolf's tail is rarely above level or curled up; a Husky Dog's is always excessively curled. Why? Perhaps it is a result of the harness toil. In hauling, unusual energy is forced into all the extremities; that in the tail is not specially directed, and therefore causes the tail to curl up, obedient to the strongest muscles, just as a man's teeth clinch under violent effort of the limbs. I doubt not, if the *flexor* muscles of the tail were strongest, instead of the *levators*, the train Dog's tail would be permanently curled between his legs.

Corroboration of this is found in a fact that I have several times observed. A train of half-bred Wolves may set off in the harness with tails down, but the moment they come to a bad place, where they must strain at the traces, their tails fly up into curl.

The Husky Dog's ears are frequently drooped. A wild Wolf's ears are erect, but, according to Captain Craine, the train Wolf at the age of 9 or 10 is apt to droop his ears.

Many observers attest the tamableness and dogginess of this animal. B. Ross says: "A full-grown Wolf became, during the months of July and August, 1857, quite domesticated at Fort Resolution. Though rather shy of the people, it lived in great harmony with the Dogs, playing and sleeping with them, and sharing their food. Around the smoke made to keep off the myriads of noxious flies from the Cattle, it reposed with the other animals, and although there was a small calf in the band, it never attempted mischief. It was shot at by an Indian and never seen after."[107]

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[106] Journal, p. 175.

[107] Fur-bearing An., Mack. R., Can. Nat., Jan., 1861, p. 11.

It is hard to understand why the train Dogs should so fear the Wolves if they are such near kin. Probably the wild ones are larger, and the train Dogs more or less cowed by their life.

A Case of Latent Ferocity

The savage nature, strong in some Wolves, however, is apt to break out at times in the train Dog, as already noted in my account of the Winnipeg Wolf on an earlier page. Another tragic incident of the kind took place recently on the Saskatchewan. It was reported to me by Dr. D. A. Stewart, of Winnipeg. A half-breed Dog-driver was taking his team and his little boy to a distant post. He left the boy in charge of the team while he went after a Deer. On his return he found the Dogs curled up asleep and nothing left of his son except fragments of his clothes. The half-breed was a devout Catholic; he drove the Dogs to the Trading Post, shot the 4 brutes, and gave them Christian burial. It is well to remember that in this case the Wolf blood was mixed with Dog.

Fidelity of the Wolf

It is only fair to offset this tale of treachery and tragedy by another that ascribes to a Wolf the fullest doglike measure of self-sacrificing devotion and fidelity. It is given as originally recorded by Walter Wood in his "North Sea Fishers and Fighters" (p. 341, 1911 ed.). It took place during the wreck of the ill-fated *Minotaur* on the North Haaks off Jutland, Dec. 23, 1810.

"There was one strange feature of the wreck which was put on record at the time. On board the *Minotaur* was a large tame Wolf which from the time it was caught as a cub had been the pet of both officers and men and had become specially attached to a Lieutenant named Salsford. When the ship was wrecked the Wolf howled pitifully, keeping close to Salsford all the time. When at last the officer tried to reach the shore by clinging to a drifting mast, his pet was with him. They were repeatedly washed off, yet helped each other back to the mast, the Wolf acting just as a big and faithful Dog would have done that was trying to save his master. The mast was driven quite close to the land, and it seemed as if the pair would reach salvation, but both were utterly exhausted and benumbed, and Salsford, unable to support himself any longer, fell away from his only hope of safety. Simultaneously the Wolf placed his paws round the drowning officer's neck, and Salsford at the same moment clasped the animal in his arms. So locked together they sank."

The Chivalry of the Wolf

One may get a shock of surprise at the admission behind such an expression, but we have been so long misled by false pictures, that the shock is salutary.

Chivalry, in its simplest aspect, may be defined as consideration by a male for a female, on account of her sex, when the sexual passion is dormant. In this light it is fair to say that there is much chivalry among Wolves. Richardson records many instances of such kindly consideration; indeed, I have heard the question raised as to whether male Dogs or Wolves will at any time attack female Dogs or Wolves, and *vice versa*. I have no personal evidence to give that they *will attack*, but I have some evidence to show that they will *refrain* from attacking.

After telling of an unusually bold Wolf that hung around Fort Franklin for days in Jan., 1827, Doctor Richardson adds:

"The same Wolf continued for some days to prowl in the vicinity of the Fort, and even stole fish from a sledge, which 2 Dogs were accustomed to draw home from the nets without a driver. As this kind of depredation could not be permitted to go on, the Wolf was waylaid and killed. It proved to be a female, which accounted for the sledge Dogs not having been molested."[108]

An interesting and more emphatic illustration is afforded by the Gray-wolf pair, Lobo and Blanca, that were kept together in the London Zoo, as already said.

These two old Wolves live in harmony the year round except when a keeper comes to the cage; both are fond of being noticed, and eager to monopolize all attention; each strives jealously to be next the bars, pushing the other away, barking and growling meanwhile, with bristling mane and evident temper.

Lobo often springs at his mate as though to bite her, but is always restrained at the last moment *by something*. What is it, if not *a feeling akin to chivalry?*

In these quarrels, if Blanca sees that she has gone too far, she apologizes by licking Lobo's face in a conciliatory manner, always effectual. (In 1909 this same relationship continued.)

The fact that the male shows chivalrous feeling, and that the pair continue as mates in the autumn and winter, when the sexual instinct is dormant, are partial evidences that Wolves pair for life.

A similar case I noted in the Rotterdam Zoo, August, 1900, where

[108] F. B. A., I, p. 63.

there were two Wolves (*lupus*), male and female. The female continually teased her mate, nipping him behind and running away. He growled savagely each time and followed barking, sometimes taking her head in his mouth, but was careful to do her no harm. And again I ask, what was it that restrained him?

Wolf Love-loyalty

John B. Burnham, the eminent traveller and hunter, gives the following interesting account of a huge male Wolf that he killed during his life on the Yukon. The pair were evidently associated although it was now the latter part of November. The devotion of the female is evident even if we do not admit that she destroyed herself for grief.

Burnham had killed the male, a huge White Wolf of estimated 125 pounds weight, and had brought the skin home on his sled.

As he made camp for the night and went on short trips to a near-by cache, he realized that he was being followed persistently by another Wolf. At last, by lying in wait, he got a brief glimpse of it, and says:

"Anxious to see if the Wolf would again show himself, I remained perfectly motionless in the same spot for several minutes. A Red-squirrel chattered, and some ravens flew up halfway between me and the spot where the Wolf had disappeared. Then I heard a twig snap on the river bank directly opposite. It was too cold to stand waiting longer, for my feet were fast becoming numb, but before I went back to the sled I ran across to the mainland, and satisfied myself from the Wolf's track that he had run up just inside the edge of the timber, coming as close as he could without exposing himself.

"This was my last trip to the cache that night. I did not go near the poison, for as the Wolf was in the immediate neighbourhood, I concluded the chances for his taking it were better if things were left undisturbed. After breakfast the next morning Mac and I started down to investigate. Another light snow had fallen in the night. Showing up plainly in this, scarcely 30 feet from our tent, we came upon fresh Wolf tracks, made in the early morning hours. To surprise Mac on his return the night before, I had cut a small tree and thrown the dead Wolf across it directly in the trail, and to this place the other Wolf had come. Plainly its boldness was due to its anxiety for its lost mate. Now that it knew conclusively the fate which had befallen him, we concluded this Wolf would not delay on the order of its leaving the country. We had little faith in finding it dead, for we thought the death of the other Wolf would put it on its guard against the poison. In this, we were curiously mistaken, however, for at the Sheep camp, a few

hundred yards below the spot where the first Wolf had died, we found the other Wolf dead also, though still warm. It was a she-Wolf, younger, smaller and darker than the old dog-Wolf we had found the night before. The top of her back was almost black, and the skin was unusually handsome. From the tracks it was evident that she had taken the poison after she had visited the dead body of her mate. She had dug it out of the snow, upset the plate and eaten half the contents. The indications suggested suicide. The sagacity of the Wolf tribe is well known, and this particular Wolf had sufficient evidence to make her fully aware of the cause of her mate's death. At various times on the previous day, she had visited the spot from which I had carried him, and though I cannot be certain of the fact, I believe that she knew the whereabouts of the poison long before she touched it. If the taking of the poison were not the act of a grieved nature, why did she return to the spot where it was hidden after seeing the dead body of her mate? Lacking a fixed purpose, the instinct of self-preservation would, one might reasonably infer, have warned her to fly elsewhere. At any rate, I give the facts as they occurred."[109]

It is not necessary to postulate a knowledge of poison, or of a future life, to justify this conclusion; but rather to realize that these were a devoted pair, and grief over the loss of her mate drove the female to such a pitch of recklessness that her usual caution was abandoned and she fell into a snare which she ordinarily would have avoided.

The Kindliness of the Wolf

P. H. Gosse, the well-known naturalist, furnishes a touching episode of Wolf goodness. I repeat it with some hesitancy.

"A few years ago," he says, "some men were going up Lee's Pond, a lake about 6 miles long, near Stanstead, which was frozen at the time, when they saw before them a party of Wolves crossing the pond. One in the centre appeared sick, and was surrounded by the rest in the manner of a body-guard. One of the men, who had a gun, pursued them, when some of the Wolves took to flight, leaving others with the supposed sick one, which, however, dropped off one by one as the pursuit grew hotter, leaving at last only 2 with it; the man then fired at one of these 2, but without killing it, and they both then fled. On coming up to the remaining one, they found it was an old she-Wolf, completely blind, as was supposed from age alone, as her teeth were almost worn down. After her last attendants had left her, she attempted to continue her course, but in a very uncertain manner, sometimes turning on her steps or going in a circle. The men put a rope round

[109] Some Yukon Notes, Forest & Stream, April 16, 1898, p. 303.

her and led her to the town. In the woods they found her den, strewed with a vast number of Deer's bones, fragments of flesh, etc., all around which the snow, though 3 feet deep, was trodden hard and smooth, and from the number of paths leading to this spot, it appeared evident that this aged Wolf had for a long time been supplied with prey by the assiduous attentions of others."[110]

Before dismissing this extraordinary story as a pure fabrication, let us remember:

1. There is a tendency among Wolves and many other animals to rally around a matriarchal leader, and to give her support;

2. The blindness may have been recent and not realized by the followers;

3. The food about the den may have been brought by the old Wolf herself or by her mate;

4. The story was accepted by P. H. Gosse who records it. He was a good naturalist and not given to romancing.

We should, at least, withhold judgment pending further evidence.

Mark Robinson says, at Canoe Lake, Algonquin Park, about 1908, "I saw the first pack of Wolves, 14 in number, come out on the lake at mid-day. They were following 4 Deer that had made a dash across the ice to an island. The Wolves were walking quite slowly and had begun to surround the island upon which the Deer had taken refuge. I opened fire at 500 yards, wounding one at the first shot. The rest of the pack scattered in all directions, until the wounded Wolf gave a peculiar howl, when the greater number returned to him and remained there until they reached the woods. I fired several more shots, but none took effect; evidently I was suffering from buck fever.

"After lunch I left a note for my companion, who had not returned from his morning patrol, then I set out fully expecting to find my wounded Wolf lying near where they entered the woods. I followed their trail all afternoon, only to find the other Wolves had neither deserted nor eaten their wounded companion, who was going much stronger at dusk."[111]

[110] Canadian Naturalist, 1840, pp. 38–39.

[111] Forest & Stream, July 6, 1912, p. 9.

STRANGE ADVENTURES WITH A WOLF

By M. W. Whittaker

This unusual story is reproduced by permission of *Rod and Gun*, in which magazine it appeared April, 1911, pp. 1425–27. Its truth is abundantly attested. It shows a little-known side of Wolf character, and explains some cases of alleged Wolf attack in which no harm was done or attempted by the Wolf. The story is told by Whittaker's uncle.

In 1871, he with two brothers and Jim Fullerton, an old miner, left their mining camp in the Peace River Valley to get provisions at Kamloops on the Thompson River, B. C. In Whittaker's own words:

"Fullerton was not in good health and as he wished to delay our progress as little as possible it was his custom to walk slowly ahead every morning as we were breaking camp and re-packing. The first morning after we left Nation River he adopted his usual course of action, but while we were engaged in fastening the packs on the Horses we saw him running toward us, his whole appearance showing tokens of fright.

"'Hello, Jim! Why, whatever is the matter?' we shouted as soon as he came within hearing distance.

"'A Wolf! a Wolf!' he gasped, when he had sufficiently recovered his breath to speak, adding, 'He's after me!'

"Sure enough, no sooner had he uttered this statement than a large Timber-wolf was seen to trot round a bend in the trail. He proved to be the largest Wolf any of us had ever seen. As soon as he saw us he stopped and gave no indications of either advancing or retreating. Although he was too far off for a good shot I drew a revolver and fired, when he started off unhurt and was speedily lost to sight.

"At the time we thought we were rid of him for good, but several times during the day we heard a mournful howl. That night after picketing our Horses and eating supper we went to bed and were just falling asleep when Fullerton's large gray Dog which was in the tent with us slunk trembling under the blankets. The folds of the tent moved a moment later and we could plainly hear a low whining. The Dog gave stronger evidences of fear, and upon rising and looking out we saw a large Wolf run off and then stop. Although it was too dark for a good aim we fired our revolvers and evidently he took the hint for he troubled us no more that night.

"For the 5 days it took us to make the journey to the fort on Stuart's Lake we heard the howling in the daytime and the whining near the tent

at night. In the mornings too when we went to bring in the Horses, the Wolf was always standing near. Strangely enough, he never offered to molest the animals, but apparently remained near them for the sake of companionship. Whenever he saw us appear, he would run off, and though we tried many dodges, he never gave us an opportunity of getting a good shot at him.

"On arrival at Stuart's Lake we found we could have all the provisions we wanted, and loading up, we went south to Stuart's River which flows out of the lake into the Fraser. 'We'll get rid of the Wolf when we cross the river,' said one, as we were engaged in making rafts on which we might cross. When our rafts were finished, we packed our outfits upon them and paddled over, our Horses swimming alongside. When safely across, we came out on a wide open plain where we could see for miles in every direction. However, we had not gone very far when we heard one of the same weird howls that had so often disturbed us on the other side of the river.

"Clearly the Wolf must have crossed, and we had not yet parted company with him as we had supposed. The old miner, who for some time past had been afraid that he was going to die, now felt sure that his end was near.

"'It's all up with me, boys,' he said in a melancholy tone. 'What reason could that Wolf have for following us if he didn't know I was going to die and he could then get my bones?'

"Nothing that we could say seemed to have any effect in raising his spirits. We told him that the Wolf merely wanted the company of the Dog, as he was probably some old fellow that had wandered from the pack and was lost and lonely. Nothing we could say shook his superstition in the least, and he continued downcast.

"Soon after this we met a band of Indians on horseback, and when we told them there was a big Wolf not far behind, they soon had him out on the plain running for his life. It was a fine sight to see the race—the great beast going like the wind, closely followed by the wild-looking Siwashes on their peculiar-looking little ponies. They chased him up into the mountains, where they could not follow and had to give him up.

"In another 5 days, we came to the mouth of the Quesnel River, the Wolf remaining near us all the time. Here there is a small settlement and as Fullerton was so ill as to be unfit for further travel, we arranged for him to stay there while we proceeded to our ranch in the Nicola Valley, about 50 miles from Kamloops. Fullerton camped with his Dog on the opposite side of the river from the town.

"After remaining on the ranch for 2 months, I went over to Kamloops

one day for the purpose of renewing supplies. There were 2 inches of snow on the ground, and I had not gone far before I noticed the tracks of a large Wolf. The tracks were of unusual size, the strides were long and even, and they pointed in the direction in which I had come on arriving at Kamloops. While about my business in the town, I suddenly encountered Fullerton, and after the usual salutations, made inquiries about the Wolf.

"'He is still with me!' said Fullerton in a melancholy tone. 'He followed me all the way down from Quesnel!'

"Then I told him about the Wolf tracks I had seen coming from the ranch, and tried to cheer him up with the assertion that he had lost the Wolf at last.

"The next day I returned to the ranch, and the same night, just as I was falling asleep, both I and my brother heard the whining with which we had become familiar the preceding few months. We kept a large black Dog about the place, and when we rose and looked out, we could hear him and the Wolf playing together like a couple of pups. We called the Dog in and sent him out again, locating the Wolf by the direction taken by the Dog.

"Our arrangements were speedily made. My brother slipped out with the intention of going round to the opposite side of the thicket in which the Wolf was hiding, hoping to drive him my way and give me the chance of a good shot. The result justified our expectations, the Wolf running past me. The moon having risen enabled me to procure a fine shot. I saw him give a lurch but he still ran on. We decided to try poison, and put out a cunningly contrived bait, securing the Dog and returning to our rest.

"During the night we heard him howling in the distance near Nicola Lake, and the next morning when we went out the poison was gone. We found the Wolf lying dead in a gulch with a load of buckshot through the body. . . .

"Why did he leave the Dog at Kamloops, and why did he come to our particular cabin when there were others in the valley? He had followed us for 500 miles across rivers and over mountains, and the only reason I can give for his strange behaviour is that he was lonely—he wanted the friendship and company of Fullerton's Dog."

His True Character—A Challenge

Thus have I offered evidence of the courage, the chivalry, the strength, the playfulness, the love loyalty, the fidelity, the friendliness, the kindliness, the heroism, the goodness of the Wolf—completing my attempt to set before you the faithful and fearless portrait of a creature so long maligned; to piece together the little scraps of truth I have found in countless hunter-

PLATE LXII.—THE GREYHOUND THAT FOLLOWED TOO FAR
Wolf study by E. T. Seton

tales, like gold raked out of garbage bins; to make you know the wild one's true character and his way of life as it really is.

Now, with all this evidence before me and much more of the same available, and with the story of Lobo in mind (for it is true in the main), can any one wonder that I love the Gray-wolf and credit him with true nobility of character—with the attributes of a splendid animal hero?

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